



Workshop Manual

Audi A6 2011 ➤

Audi A6 Avant 2011 ➤

Audi A6 China 2012 ➤

Communication

Edition 10.2019



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List of Workshop Manual Repair Groups

Repair Group

91 - Communication



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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.



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91 – Communication

1 Infotainment system

(ARL006711; Edition 10.2019)

⇒ [“1.1 Layout - infotainment system”, page 1](#)

⇒ [“1.2 Overview of fitting locations - infotainment system”, page 7](#)

⇒ [“1.3 Removing and installing infotainment system display”, page 10](#)

⇒ [“1.4 Removing and installing control unit 1 for information electronics J794”, page 18](#)

⇒ [“1.5 Removing and installing multimedia system operating unit E380”, page 21](#)

⇒ [“1.6 Pin assignment”, page 25](#)

1.1 Layout - infotainment system

⇒ [“1.1.1 Layout - infotainment system, MMI navigation system 7T2”, page 1](#)

⇒ [“1.1.2 Layout - infotainment system, MMI navigation system plus 7T6, up to model year 2014”, page 3](#)

⇒ [“1.1.3 Layout - infotainment system, MMI navigation system plus 7UG, from model year 2015 onwards”, page 5](#)

1.1.1 Layout - infotainment system, MMI navigation system 7T2

7T2 - MMI navigation system

- ◆ Control unit 1 for information electronics - J794- with integrated CD player/SD memory card readers/navigation system in dash panel
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Multimedia system operating unit - E380- in centre console, QW1
- ◆ CD changer - R41- in glove box, 7A2
- ◆ Connection for external audio sources - R199- in centre console, UF7
- ◆ Digital sound package control unit - J525- in luggage compartment (rear left)
- ◆ Sound systems: standard/BOSE, 9VD/8RY
- ◆ Radio - R- integrated in control unit 1 for information electronics - J794- , 8DP
- ◆ Bluetooth hands-free system, 9ZX
- ◆ Speech dialogue system, QH1

Optional equipment

- ◆ Digital radio - R147- integrated in control unit 1 for information electronics - J794- , Europe/rest-of-world and QV3 only
- ◆ Satellite radio - R146- integrated in control unit 1 for information electronics - J794- , USA and QV8 only

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- ◆ Mobile phone pre-installation, 9ZF
- ◆ Multi-function steering wheel

1 - Roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - Control unit 1 for information electronics - J794- in dash panel

5 - Connection for external audio sources - R199- in centre console

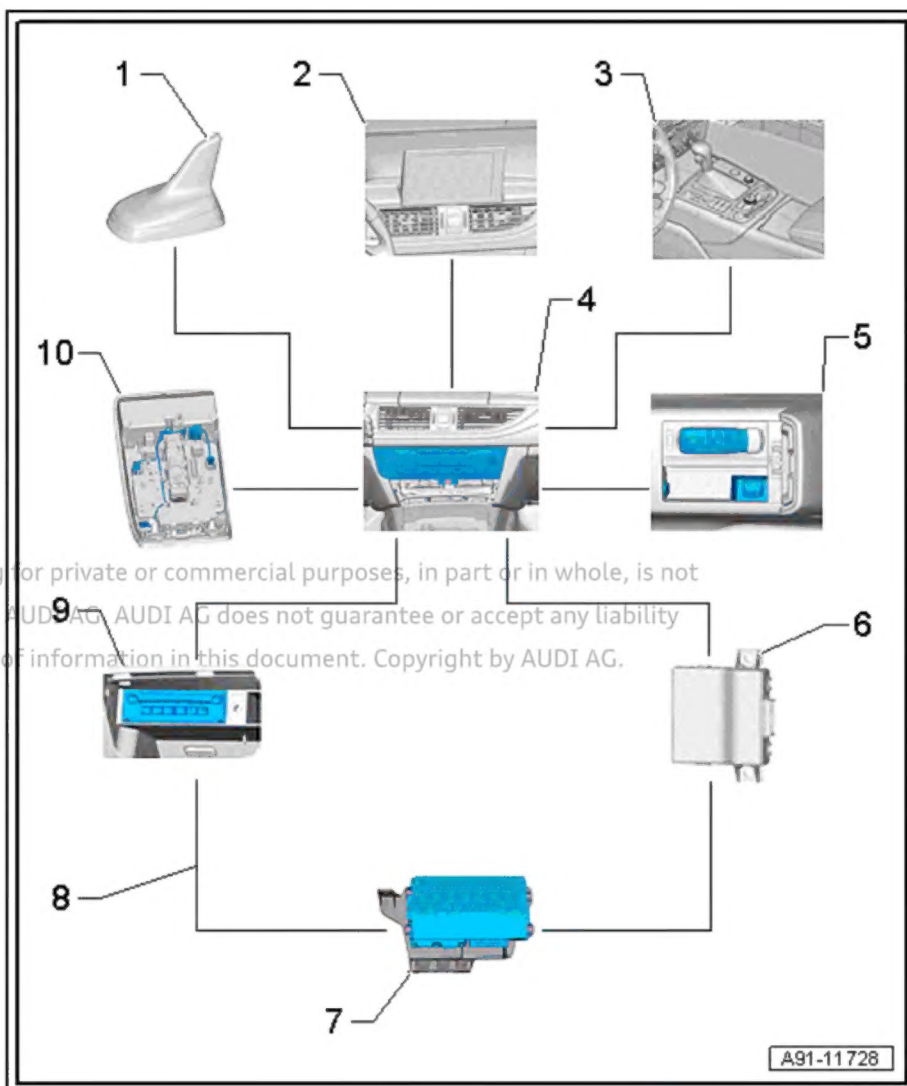
6 - Data bus diagnostic interface - J533- beneath rear seat bench

7 - Digital sound package control unit - J525- in luggage compartment (rear left)

8 - MOST bus

9 - CD changer - R41- in glove box

10 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-



The exchange of data in the MMI systems takes place via the MOST bus.

The connection to other data bus systems in the vehicle is handled by the data bus diagnostic interface - J533- .

Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.



If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



1.1.2 Layout - infotainment system, MMI navigation system plus 7T6, up to model year 2014

7T6 - MMI navigation system plus

- ◆ Control unit 1 for information electronics - J794- with integrated CD player/DVD player/SD memory card readers/navigation system/HDD in dash panel
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Multimedia system operating unit - E380- in centre console, QW1
- ◆ DVD changer - R161- in glove box, 6G0
- ◆ Connection for external audio sources - R199- in centre console, UF7
- ◆ Digital sound package control unit - J525- in luggage compartment (rear left)
- ◆ Sound systems: standard/BOSE/Bang & Olufsen, 9VD/8RY/8RF
- ◆ Radio - R- in luggage compartment (rear left), 8YQ/8AJ
- ◆ TV tuner - R78- in luggage compartment (rear left), QU6/QU7
- ◆ Bluetooth hands-free system, 9ZX
- ◆ Speech dialogue system, QH1

Optional equipment

- ◆ Digital radio - R147- integrated in radio - R- , Europe/rest-of-world and QV3 only
- ◆ Satellite radio - R146- integrated in radio - R- , USA and QV8 only
- ◆ Bluetooth car phone, 9ZW
- ◆ Multi-function steering wheel



1 - Roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - Control unit 1 for information electronics - J794- in dash panel

5 - Telephone bracket - R126- / connection for external audio sources - R199- in centre console storage compartment

6 - MOST bus

7 - Data bus diagnostic interface - J533- beneath rear seat bench

8 - Digital sound package control unit - J525- in luggage compartment (rear left)

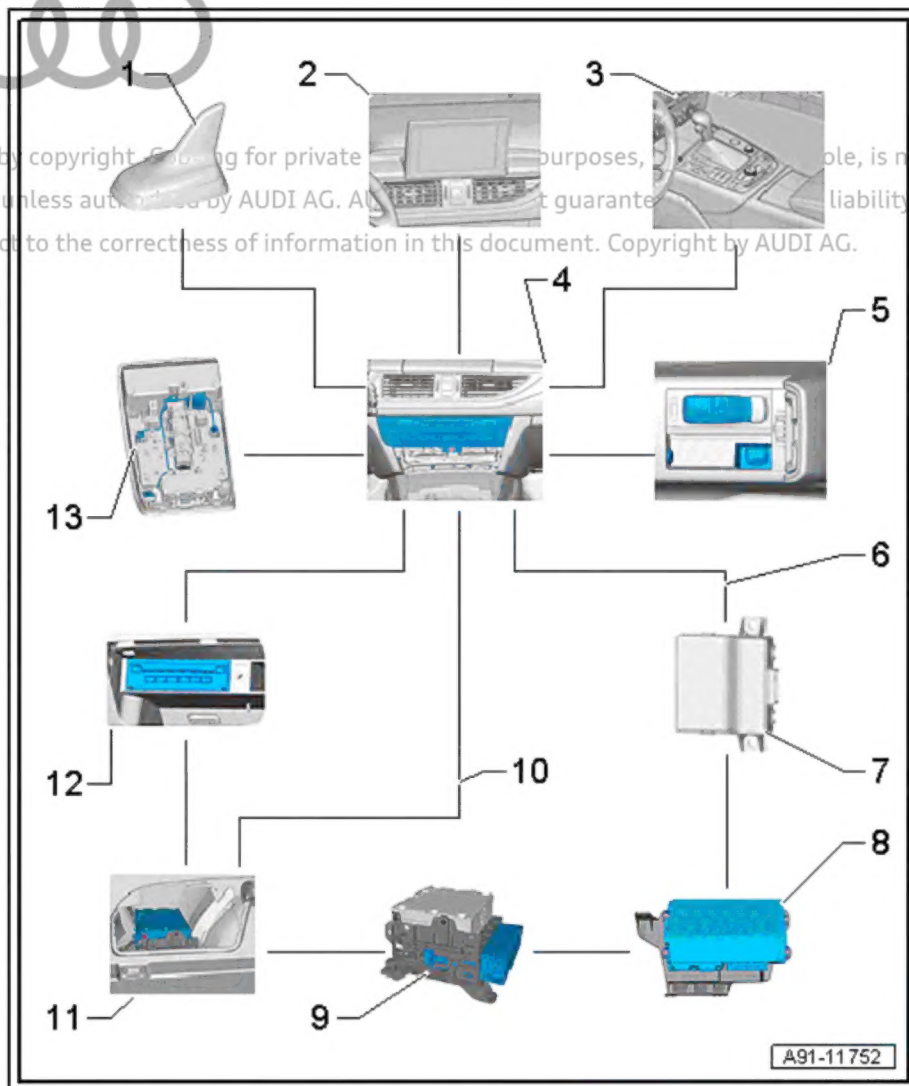
9 - Radio - R- in luggage compartment (rear left)

10 - FBAS wire

11 - TV tuner - R78- in luggage compartment (rear left)

12 - DVD changer - R161- in glove box

13 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-



The exchange of data in the MMI systems takes place via the MOST bus.

The connection to other data bus systems in the vehicle is handled by the data bus diagnostic interface - J533- .

Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.



If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



1.1.3 Layout - infotainment system, MMI navigation system plus 7UG, from model year 2015 onwards

7UG - MMI navigation system plus

- ◆ Control unit 1 for information electronics - J794- with integrated CD player/DVD player/SD memory card readers/navigation system/HDD in dash panel
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Multimedia system operating unit - E380- in centre console, QW1
- ◆ DVD changer - R161- in glove box, 6G2
- ◆ Connection for external audio sources - R199- in centre console storage compartment, UI2
- ◆ Digital sound package control unit - J525- in luggage compartment (rear left)
- ◆ Sound systems: standard/BOSE/Bang & Olufsen, 9VD/8RY/8RF
- ◆ Radio - R- integrated in control unit 1 for information electronics - J794- , I8H
- ◆ TV tuner - R78- in luggage compartment (rear left), QU1/QV1
- ◆ Video input for reversing camera system, KA2
- ◆ Bluetooth hands-free system, 9ZX
- ◆ Speech dialogue system, QH1

Optional equipment

- ◆ Audi connect with Bluetooth car phone, 9ZK
- ◆ Audi phone box, 9ZE
- ◆ Audi phone box and Audi connect, 9ZC
- ◆ Digital radio - R147- integrated in control unit 1 for information electronics - J794- , Europe/rest-of-world and QV3 only
- ◆ Satellite radio - R146- integrated in control unit 1 for information electronics - J794- , USA and QV8 only

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1 - Roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - Telephone bracket - R126- / connection for external audio sources - R199- in centre console storage compartment

5 - Control unit 1 for information electronics - J794- in dash panel

6 - MOST bus

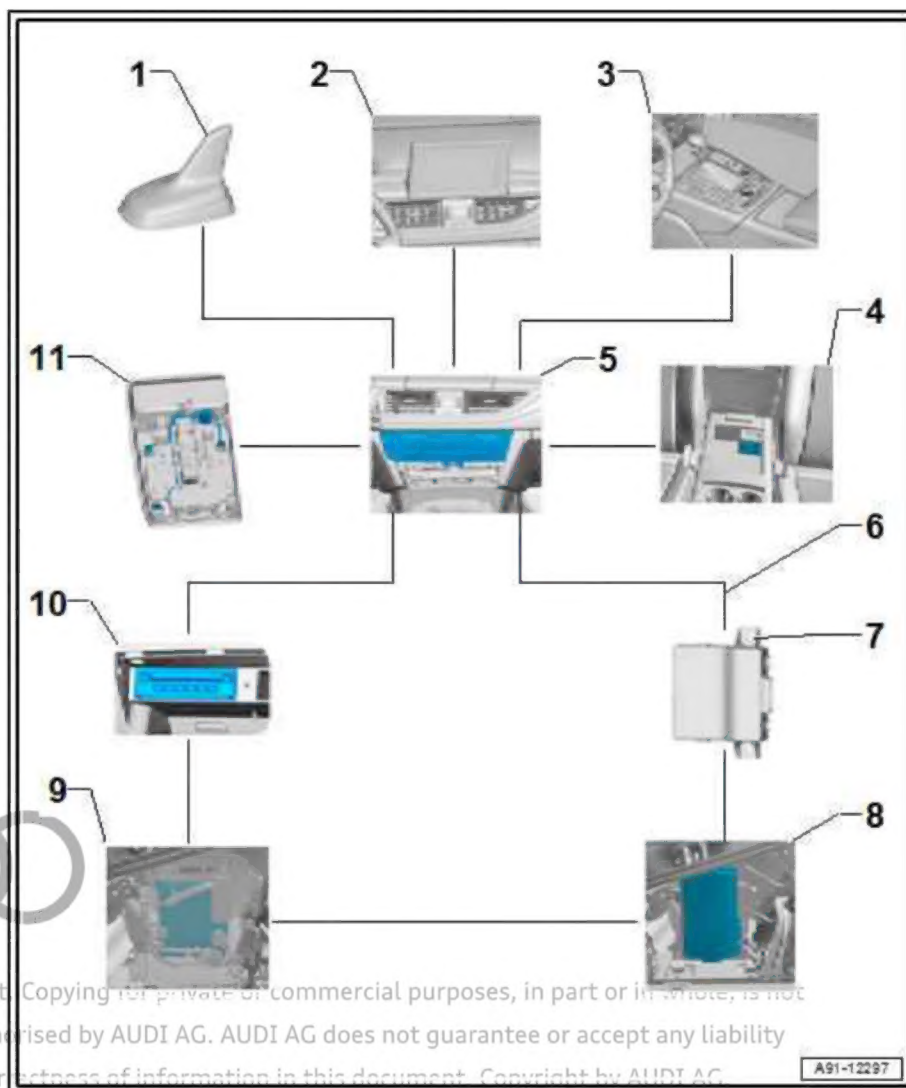
7 - Data bus diagnostic interface - J533- beneath rear seat bench

8 - Digital sound package control unit - J525- in luggage compartment (rear left)

9 - TV tuner - R78- in luggage compartment (rear left)

10 - DVD changer - R161- in glove box

11 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-



The exchange of data in the MMI systems takes place via the MOST bus.

The connection to other data bus systems in the vehicle is handled by the data bus diagnostic interface - J533- .

Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.



If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .

VAS 6223 A



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1.2 Overview of fitting locations - infotainment system

⇒ ["1.2.1 Overview of fitting locations - infotainment system, up to model year 2014", page 7](#)

⇒ ["1.2.2 Overview of fitting locations - infotainment system, from model year 2015 onwards", page 9](#)

1.2.1 Overview of fitting locations - infotainment system, up to model year 2014

1 - Control unit 1 for information electronics - J794-

- ☐ Pin assignment for navigation system 7T2
⇒ [page 27](#)
- ☐ Pin assignment for navigation system plus 7T6
⇒ Current flow diagrams, Electrical fault finding and Fitting locations

- ☐ Removing and installing
⇒ [page 18](#)

2 - Bolt

- ☐ 3 Nm

3 - Control unit 1 for information electronics - J794-

4 - Bolt

- ☐ 4x
- ☐ 1 Nm

5 - Trim

6 - TV tuner - R78-

7 - Rack

8 - Radio - R-

- ☐ Pin assignment
⇒ [page 146](#)
- ☐ Removing and installing
⇒ [page 137](#)



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9 - TV tuner - R78-

10 - Rack

11 - Nut

- ☐ 2x
- ☐ 4 Nm

12 - Nut

- ☐ 4 Nm

13 - Multimedia system operating unit - E380-

- ☐ Pin assignment ⇒ [page 34](#)
- ☐ Removing and installing ⇒ [page 21](#)
- ☐ With touchpad control unit - J929-
- ☐ Renewing touchpad control unit - J929- ⇒ [page 24](#)

14 - Display unit for front information display and operating unit control unit - J685-

- ☐ Pin assignment ⇒ [page 25](#)
- ☐ Removing and installing 6.5-inch display with kinematic display carrier ⇒ [page 10](#)
- ☐ Removing and installing 8-inch display with kinematic display carrier ⇒ [page 11](#)
- ☐ Removing and installing front and rear cover ⇒ [page 14](#)
- ☐ Service position for display ⇒ [page 15](#)

15 - Bolt

- ☐ 2x
- ☐ 3 Nm

16 - Radio release tool - T10057-

17 - DVD changer - R161-

- ☐ Pin assignment ⇒ [page 150](#)
- ☐ Removing and installing ⇒ [page 152](#)

1.2.2 Overview of fitting locations - infotainment system, from model year 2015 onwards

1 - Control unit 1 for information electronics - J794-

- ❑ Pin assignment ➔ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Removing and installing ➔ [page 18](#)

2 - Bolt

- ❑ 3 Nm

3 - Trim

4 - Bolt

- ❑ 4x
- ❑ 1 Nm

5 - Control unit 1 for information electronics - J794-

6 - TV tuner - R78-

7 - Multimedia system operating unit - E380-

- ❑ Pin assignment ➔ [page 34](#)
- ❑ Removing and installing ➔ [page 21](#)
- ❑ With touchpad control unit - J929-
- ❑ Renewing touchpad control unit - J929- ➔ [page 24](#)

8 - Display unit for front information display and operating unit control unit - J685-

- ❑ Pin assignment ➔ [page 25](#)
- ❑ Removing and installing 6.5-inch display with kinematic display carrier ➔ [page 10](#)
- ❑ Removing and installing 8-inch display with kinematic display carrier ➔ [page 11](#)
- ❑ Removing and installing front and rear cover ➔ [page 14](#)
- ❑ Service position for display ➔ [page 15](#)

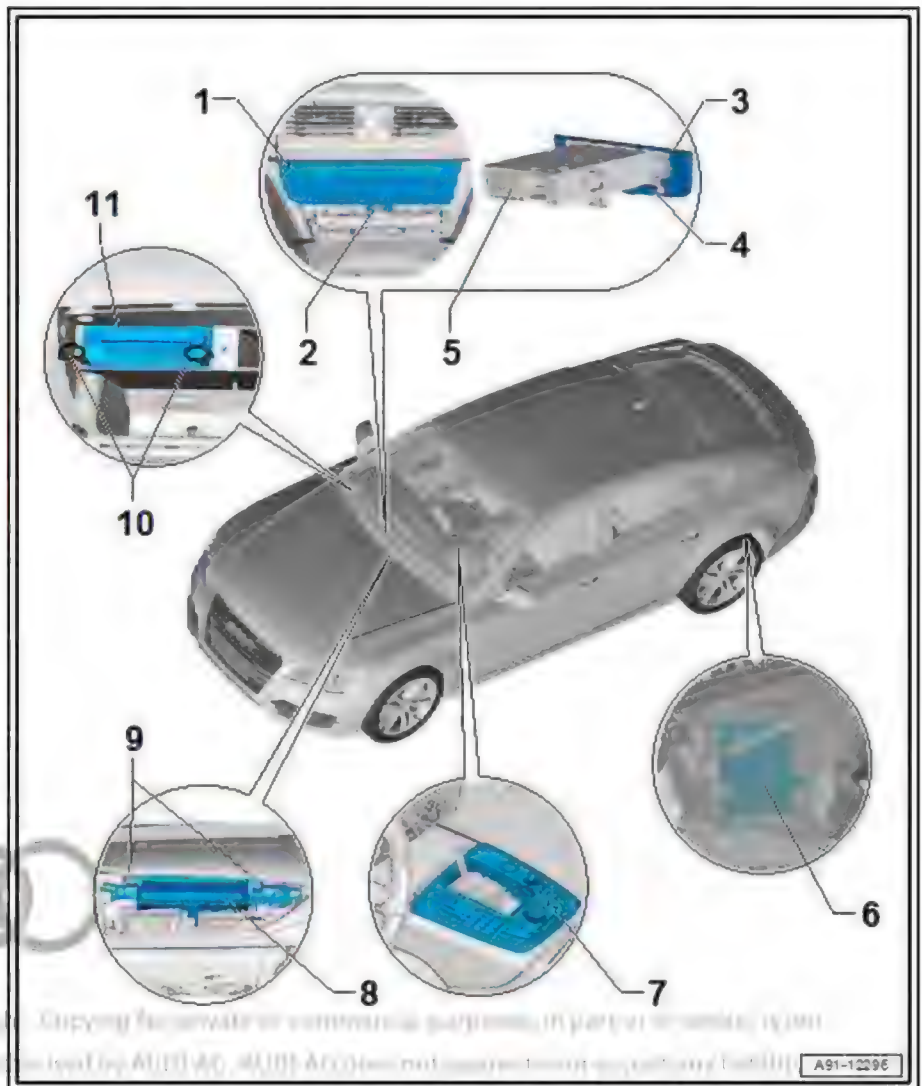
9 - Bolt

- ❑ 2x
- ❑ 3 Nm

10 - Radio release tool - T10057-

11 - DVD changer - R161-

- ❑ Pin assignment ➔ [page 150](#)
- ❑ Removing and installing ➔ [page 152](#)



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1.3 Removing and installing infotainment system display

⇒ "1.3.1 Removing and installing 6.5-inch display with kinematic display carrier", page 10

⇒ "1.3.2 Removing and installing 8-inch display with kinematic display carrier", page 11

⇒ "1.3.3 Front display, removing and installing front and rear cover", page 14

⇒ "1.3.4 8 inch front display, service position ", page 15

⇒ "1.3.5 Removing and installing rear display Y22 / Y23 ", page 16

1.3.1 Removing and installing 6.5-inch display with kinematic display carrier

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



Display unit for front information display and operating unit control unit - J685- (display) is located in dash panel (centre).

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove dash panel vents (centre) ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing dash panel vent .

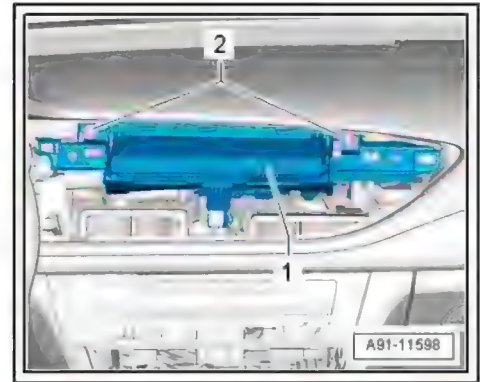
When removing centre vents, two securing bolts for kinematic display carrier are removed at the same time.



Caution

Note the wire routing for the display in the dash panel. When installing, ensure the wiring is correctly routed; otherwise it is no longer possible to extend the display.

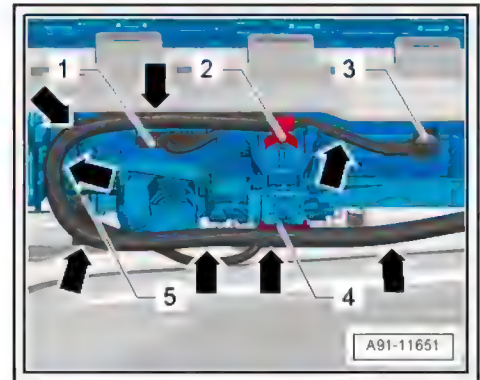
- Remove bolts -2- and pull display unit for front information display and operating unit control unit - J685- -1- out of dash panel until connectors on reverse side are accessible.



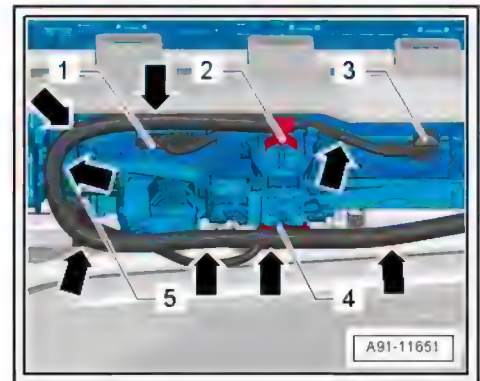
- First disconnect wiring clip -4-, proceed with display connectors -1- and -3-, then wiring clip -2- and finally unplug connector for motor -5-.
- Pull display unit for front information display and operating unit control unit - J685- completely out of dash panel.

Installing

- Installation is carried out in reverse sequence; note the following:



- Make sure that wiring from display unit for front information display and operating unit control unit - J685- to wiring harness and control unit 1 for information electronics - J794- is correctly routed -arrows-, as otherwise display unit for front information display and operating unit control unit - J685- does not extend.
- First connect wiring clip in centre -2-, proceed with display connectors -1- and -3-, then rear wiring clip -4- and finally connector for motor -5-.

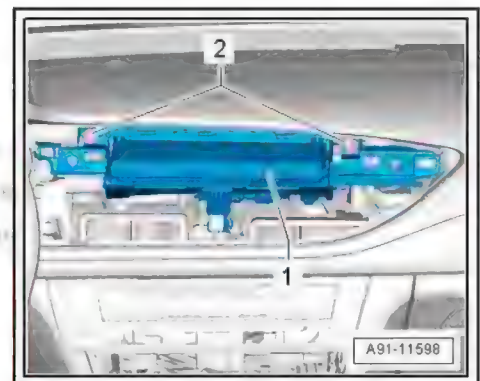


- Slide display unit for front information display and operating unit control unit - J685- into dash panel and hand-tighten bolts -2-.

After fitting centre vents, align all components and tighten bolts.

Tightening torques

- ◆ ⇒ ["4.2.1 Overview of fitting locations - radio RMC, 8DN, 8DP", page 135](#)
- ◆ ⇒ ["1.2.1 Overview of fitting locations - infotainment system, up to model year 2014", page 7](#)
- ◆ ⇒ ["1.2.2 Overview of fitting locations - infotainment system, from model year 2015 onwards", page 9](#)



1.3.2 Removing and installing 8-inch display with kinematic display carrier

Special tools and workshop equipment required

◆ Torque screwdriver - V.A.G 1624-



Display unit for front information display and operating unit control unit - J685- (display) is located in dash panel (centre).



Note

- ◆ *It is only necessary to move the display unit for front information display and operating unit control unit - J685- into the service position if the display is to be separated from the kinematic display carrier ➔ [page 15](#).*
- ◆ *It is not necessary to move the display unit for front information display and operating unit control unit - J685- into the service position if the display and kinematic display carrier are simply being removed and installed.*

- ➔ Vehicle diagnostic tester must remain connected if display unit for front information display and operating unit control unit - J685- has been moved to service position.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove dash panel vents (centre) ➔ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing dash panel vent .

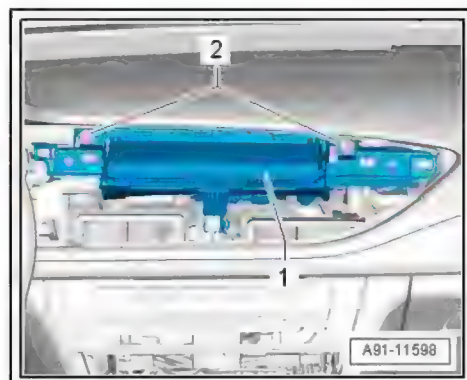
When removing centre vents, two securing bolts for kinematic display carrier are removed at the same time.



Caution

Note the wire routing for the display in the dash panel. When installing, ensure the wiring is correctly routed; otherwise it is no longer possible to extend the display.

- Remove bolts -2- and pull display unit for front information display and operating unit control unit - J685- -1- out of dash panel until connectors on reverse side are accessible.





- First disconnect wiring clip -4-, proceed with display connectors -1- and -3-, then wiring clip -2- and finally unplug connector for motor -5-.
- Pull display unit for front information display and operating unit control unit - J685- completely out of dash panel.

Installing

- Installation is carried out in reverse sequence; note the following:
- Make sure that wiring from display unit for front information display and operating unit control unit - J685- to wiring harness and control unit 1 for information electronics - J794- is correctly routed -arrows-, as otherwise display unit for front information display and operating unit control unit - J685- does not extend.
- First connect wiring clip in centre -2-, proceed with display connectors -1- and -3-, then rear wiring clip -4- and finally connector for motor -5-.

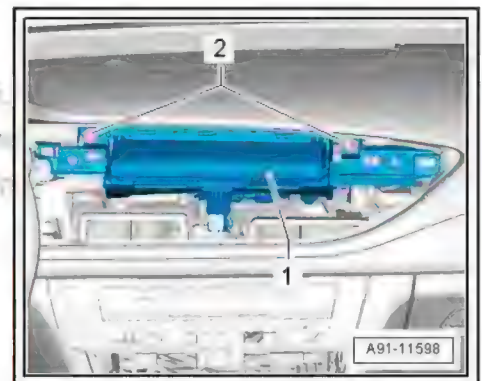
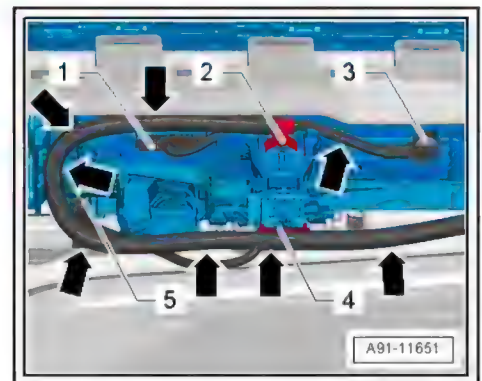
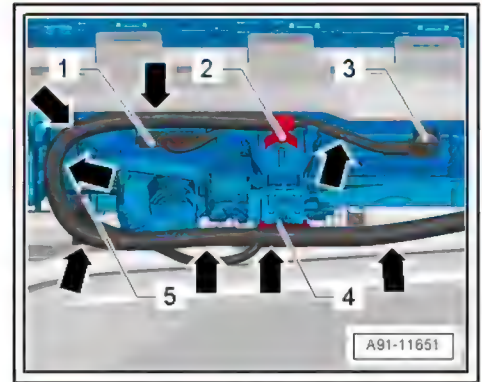


- Slide display unit for front information display and operating unit control unit - J685- into dash panel and hand-tighten bolts -2-.

After fitting centre vents, align all components and tighten bolts.

Tightening torques

- ◆ ⇒ ["1.2.1 Overview of fitting locations - infotainment system, up to model year 2014", page 7](#)
- ◆ ⇒ ["1.2.2 Overview of fitting locations - infotainment system, from model year 2015 onwards", page 9](#)



1.3.3 Front display, removing and installing front and rear cover



Caution

Risk of irreparable damage to electronic equipment.

- ◆ *Requirement for cleanliness: Make sure no particles come into contact with display, in particular no metallic or otherwise conductive material.*
- ◆ *When handling the removed display, ensure that no oil, grease, silicone or other material comes into contact with parts of the display. These materials can evaporate and build up a film on the display.*
- ◆ *Do NOT touch the electronic printed circuit boards with bare hands, as this can cause migration.*
- ◆ *Electrostatic discharge (ESD) protection: The requirements according to DIN 613-40-5-1 must always be met when handling electronic equipment.*
- ◆ *Do not re-use electronic equipment (i.e. components, assemblies) which has been dropped.*
- ◆ *ESD (electrostatic discharge) workplace -VAS 6613- ➔ Electrical system; General information; Rep. gr. 97; ESD (electrostatic discharge) workplace VAS 6613.*

The display unit for front information display and operating unit control unit - J685- can be disconnected from kinematic display carrier. If front or rear covers are scratched or defective, they can be renewed individually.

The display unit for front information display and operating unit control unit - J685- consists of the following components: front cover -1-, display -2-, display carrier -3- and rear cover -5-. Display and display carrier are secured with bolts -4-, front and rear covers are clipped on.

According to ➔ ETKA (Electronic parts catalogue) display is delivered with kinematic display carrier already fitted. Front cover -1- and rear cover -5- can be ordered and renewed individually.

- Switch off ignition and all electrical equipment, and remove ignition key.

Removing

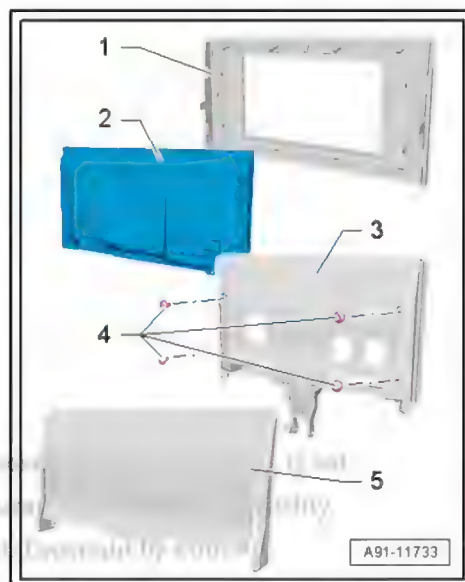
- Remove display with kinematic display carrier:

◆ 6.5-inch ➔ [page 10](#)

◆ 8-inch ➔ [page 11](#)

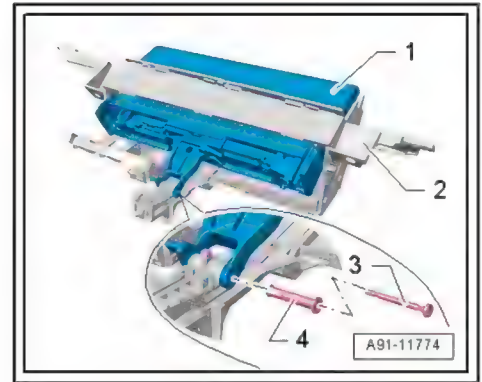
First separate display unit for front information display and operating unit control unit - J685- from kinematic display carrier.

- Observe requirements for electrostatic discharge (ESD) protection ➔ [page 14](#).





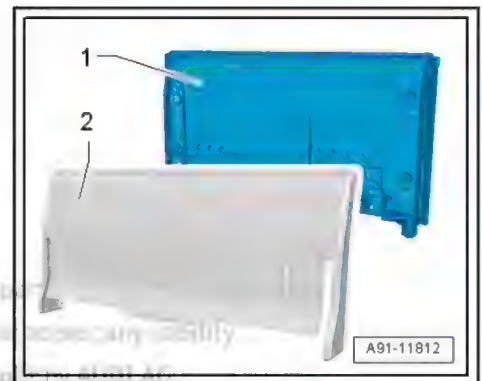
- Pull pivot pin -3- and bearing sleeve -4- out of display carrier -1-.
- Pull display carrier -1- out of kinematic display carrier -2-.



- Unclip rear cover -2- from display carrier with display -1-.



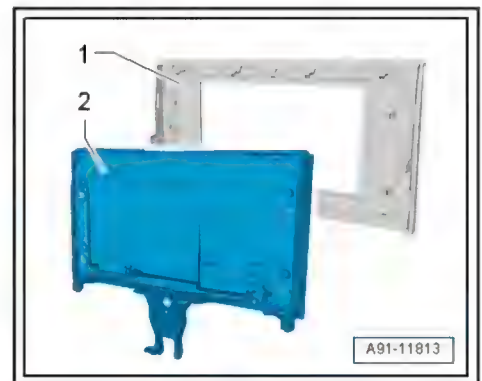
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- Unclip front cover -1- from display carrier with display -2-.

Installing

- Installation is carried out in reverse sequence; note the following:
- Observe requirements for electrostatic discharge (ESD) protection ⇒ [page 14](#) .



1.3.4 8 inch front display, service position

Moving unit into service position

⇒ Vehicle diagnostic tester must be connected.

- Select **Diagnosis** mode and begin diagnosis.
- Choose **Select own test** and select following options one after the other:
 - ◆ Body
 - ◆ Electrical system
 - ◆ 01 - Self-diagnosis compatible systems
 - ◆ 5F - Information electronics 1 - J794
 - ◆ 5F - Information electronics 1, functions
 - ◆ 5F - Move display rotation mechanism to service position
- Follow instructions on ⇒ Vehicle diagnostic tester.

1.3.5 Removing and installing rear display - Y22- / -Y23-

Special tools and workshop equipment required

◆ Removal wedge - 3409-



◆ Torque screwdriver - V.A.G 1624-



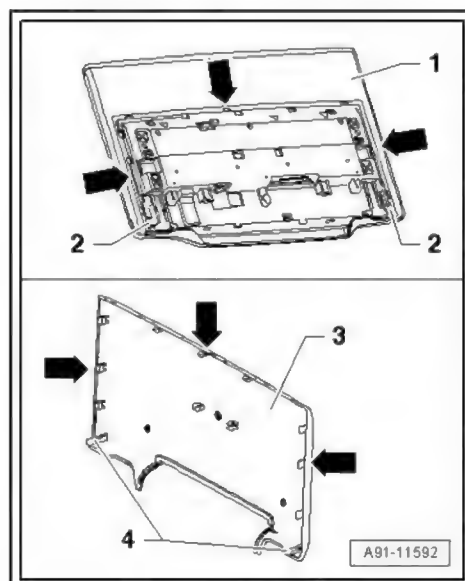
The procedure for removing and installing multimedia system display unit 1 - Y22- and multimedia system display unit 2 - Y23- is the same.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.

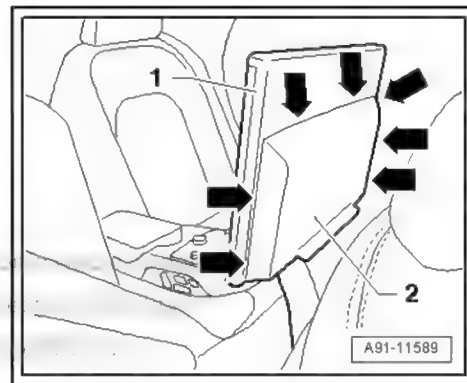
A bracket secures the display on the back of the front seats. The bracket does not have to be removed.

Cover -3- is fastened to rear of display -1-. When removing and installing, first slide lugs -4- into slots -2- at bottom of display -1-; then clip in all other lugs -arrows-.

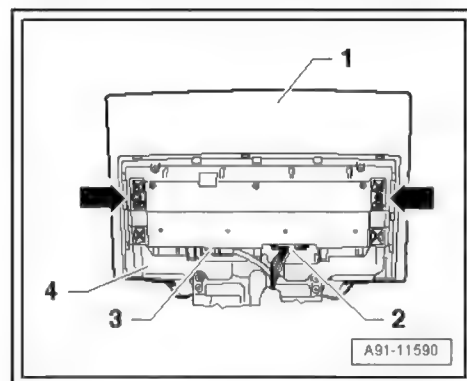




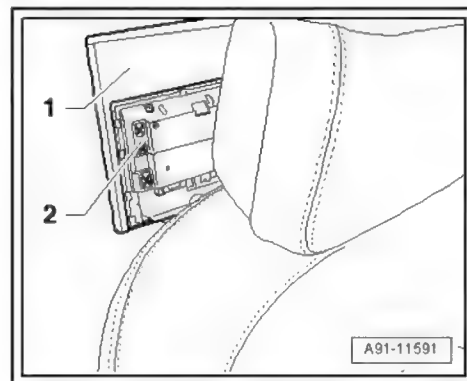
- Use removal wedge - 3409- to carefully unclip cover -2- from display -1- -arrows-.



Display -1- is secured to bracket -4- with two bolts -arrows-.



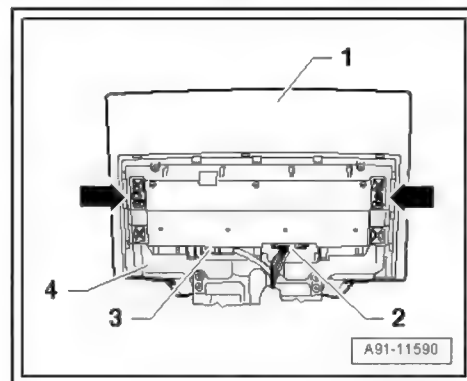
- Unscrew bolts -2- and slide display -1- slightly upwards until connectors are accessible.



- Release and unplug connectors -2- and -3- on reverse side of display -1-.
- Completely detach display upwards from bracket.

Installing

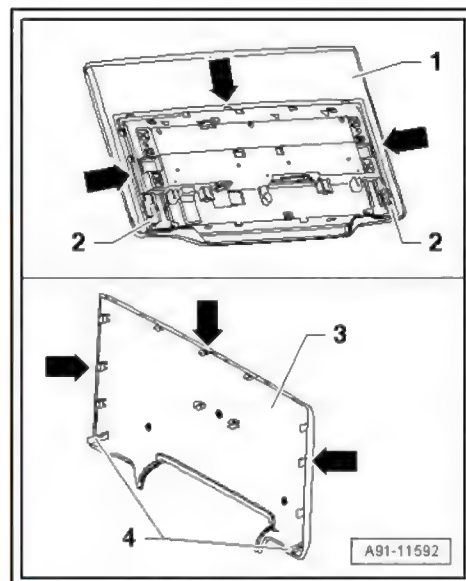
- Installation is carried out in reverse sequence; note the following:



Cover -3- is fastened to rear of display -1-. When removing and installing, first slide lugs -4- into slots -2- at bottom of display -1-; then clip in all other lugs -arrows-.

Tightening torques

- ◆ ⇒ ["13.2 Overview of fitting locations - Rear Seat Entertainment system", page 272](#)



1.4 Removing and installing control unit 1 for information electronics - J794-

⇒ ["1.4.1 Removing and installing control unit 1 for information electronics J794", page 18](#)

⇒ ["1.4.2 Removing and installing control unit 2 for information electronics J829", page 20](#)

1.4.1 Removing and installing control unit 1 for information electronics - J794-

Special tools and workshop equipment required

- ◆ Protective cap for cable connector - VAS 6223/9-



- ◆ Torque screwdriver - V.A.G 1624-



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The control unit 1 for information electronics - J794- is located in the dash panel.



Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ➔ Vehicle diagnostic tester.

Removing

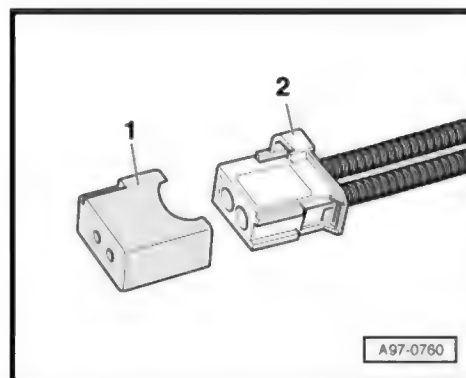
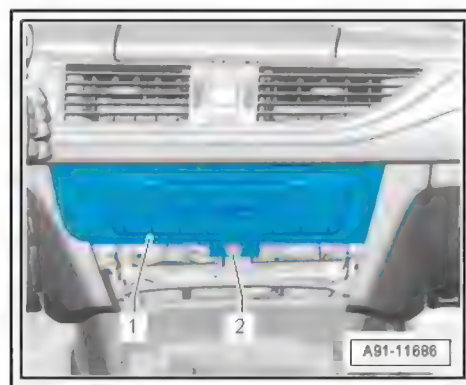
- Eject any CD that is still in control unit 1 for information electronics - J794- .
- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove Climatronic control unit - J255- ➔ Heating, air conditioning; Rep. gr. 87 ; Operating and display unit; Removing and installing operating and display unit .
- Remove bolt -2- on control unit 1 for information electronics - J794- -1-.
- Pull control unit 1 for information electronics - J794- -1- out of mounting frame.



Caution

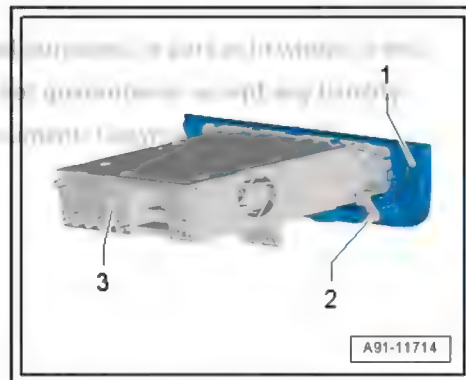
Note the wire routing for the display in the dash panel. When installing, ensure the wiring is correctly routed; otherwise it is no longer possible to extend the display.

- Release and unplug all connectors at control unit 1 for information electronics - J794- and at trim panel with switches.
- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



Then trim panel with switches -1- must be detached from control unit 1 for information electronics - J794- -3-.

Removing trim panel



- Remove bolts -2- and detach trim panel with switches -1- from control unit 1 for information electronics - J794- -3-.

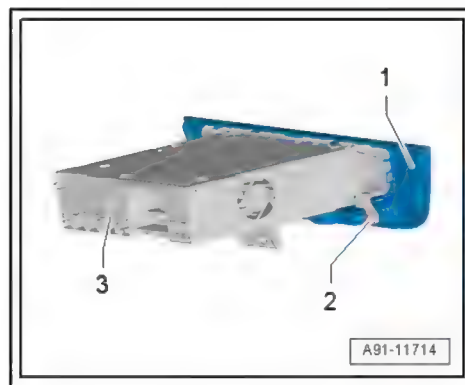
Installing

- Installation is carried out in reverse sequence; note the following:
- Make sure that wiring from display unit for front information display and operating unit control unit - J685- to wiring harness and control unit 1 for information electronics - J794- is correctly routed, as otherwise display unit for front information display and operating unit control unit - J685- does not extend.



Caution

Note the wire routing for the display in the dash panel. When installing, ensure the wiring is correctly routed; otherwise it is no longer possible to extend the display.



Tightening torques

- ◆ ⇒ [“4.2.2 Overview of fitting locations - MMI radio, 8YQ, 8AJ, l8H”, page 136](#)
- ◆ ⇒ [“1.2.1 Overview of fitting locations - infotainment system, up to model year 2014”, page 7](#)
- ◆ ⇒ [“1.2.2 Overview of fitting locations - infotainment system, from model year 2015 onwards”, page 9](#)

1.4.2 Removing and installing control unit 2 for information electronics - J829-

Special tools and workshop equipment required

- ◆ Radio release tool - T10057-



- ◆ Protective cap for cable connector - VAS 6223/9-



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The control unit 2 for information electronics - J829- -1- is located between the rear seats in the back panel.

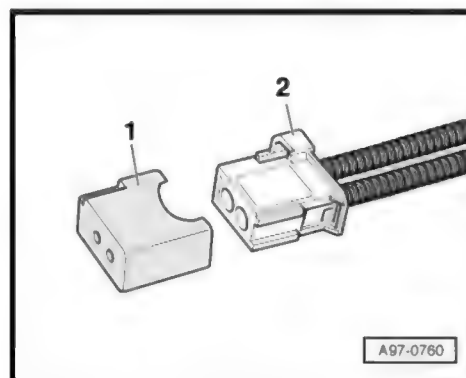
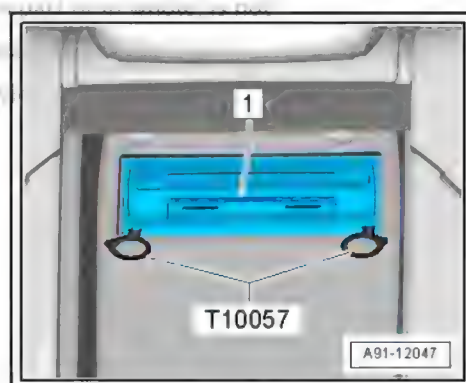
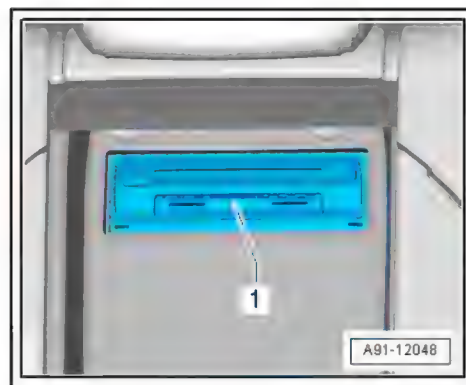


Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ⇒ Vehicle diagnostic tester.

Removing

- Fold down rear centre armrest.
- Take out DVD and SD cards that are still in control unit 2 for information electronics - J829- .
- Switch off ignition and all electrical equipment, and remove ignition key.
- Insert two radio release tools - T10057- into slots in control unit 2 for information electronics - J829- -1- until they engage. Pointed ends of grips must face outwards.
- Pull control unit 2 for information electronics - J829- -1- out of mounting frame.
- Press release tabs on control unit 2 for information electronics - T10057- and remove radio release tools - J829- .
- Release and unplug connectors at control unit 2 for information electronics - J829- .
- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



Installing

- Installation is carried out in reverse sequence; note the following:
- Plug all connectors in.
- Slide control unit 2 for information electronics - J829- into mounting frame until it engages.

1.5 Removing and installing multimedia system operating unit - E380-

⇒ "1.5.1 Removing and installing multimedia system operating unit E380 , QW1", page 21

⇒ "1.5.2 Removing and installing multimedia system operating unit 2 E499 ", page 22

⇒ "1.5.3 Removing and installing touchpad control unit J929 - UJ1", page 24

1.5.1 Removing and installing multimedia system operating unit - E380- , QW1

The multimedia system operating unit - E380- is located in the centre console (front).

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.

The multimedia system operating unit - E380- is attached to the centre console with four spring catches.



Caution

The surfaces become scratched easily.

Carefully mask all surfaces and components to provide protection.



Vehicles with automatic gearbox

- Remove selector lever boot ⇒ Automatic gearbox; Rep. gr. 37 ; Selector mechanism; Removing and installing selector lever handle /⇒ Dual clutch gearbox; Rep. gr. 34 ; Selector mechanism; Removing and installing selector lever handle .

Vehicles with manual gearbox

- Pry off gear lever boot ⇒ 6-speed manual gearbox 0B1, front-wheel drive; Rep. gr. 34 ; Selector mechanism; Exploded view - gear knob and cover .

All vehicles (continued)

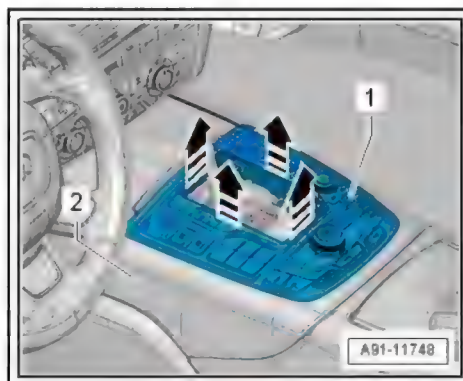
- Reach into opening with both hands and pull multimedia system operating unit - E380- -1- abruptly upwards -arrows- and out of centre console -2-.



Caution

Note lengths of wires to connectors.

- Release and unplug connector on reverse side of multimedia system operating unit - E380- .
- Remove switches fitted ⇒ Electrical system; Rep. gr. 96 ; Controls; Overview of fitting locations - controls in centre console .



Installing

- Install in reverse sequence of removal.

1.5.2 Removing and installing multimedia system operating unit 2 - E499-

Special tools and workshop equipment required

◆ Removal wedge - 3409-



The multimedia system operating unit 2 - E499- -1- is located in the rear centre armrest.

Removing

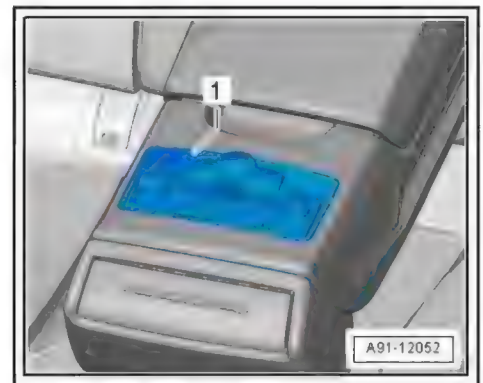
- Switch off ignition and all electrical equipment, and remove ignition key.
- Fold down rear centre armrest.



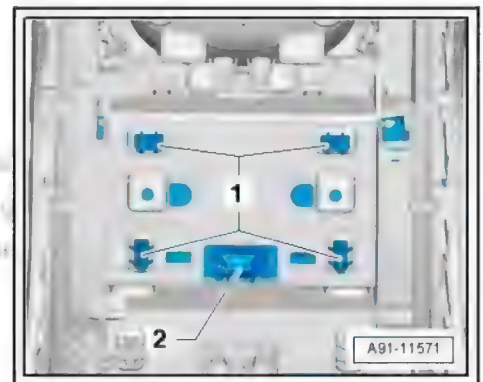
Caution

The surfaces become scratched easily.

Carefully mask all surfaces and components to provide protection.



The multimedia system operating unit 2 - E499- -2- is secured by spring clips -1- in the rear centre armrest.



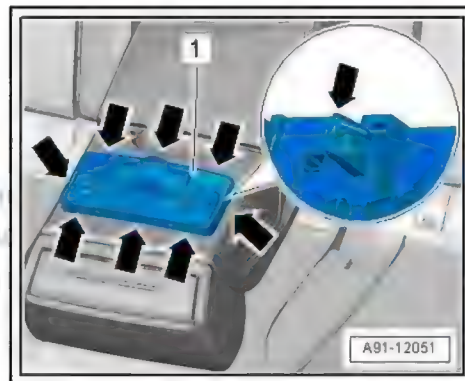
- Starting from rear -arrows-, carefully push multimedia system operating unit 2 - E499- -1- out of rear centre armrest using removal wedge - 3409- .
- Note that the spring clips -arrow- are very tightly fitted.



Caution

The surfaces become scratched easily.

Carefully mask all surfaces and components to provide protection.



- Release and unplug connector on reverse side of multimedia system operating unit 2 - E499- -1-.

Installing

- Install in reverse sequence of removal.



Caution

The surfaces become scratched easily.

Carefully mask all surfaces and components to provide protection.

1.5.3 Removing and installing touchpad control unit - J929- - UJ1

The touchpad control unit - J929- is located on the underside of the multimedia system operating unit - E380- . It cannot be renewed separately.

In the event of a defect, the multimedia system operating unit - E380- must be renewed ⇒ [page 21](#) .



1.6 Pin assignment

⇒ "1.6.1 Pin assignment for display unit for front information display and operating unit control unit J685", page 25

⇒ "1.6.2 Pin assignment for rear display Y22 / Y23", page 26

⇒ "1.6.3 Pin assignment for MMI navigation system, 7T2", page 27

⇒ "1.6.4 Pin assignment for control unit 2 for information electronics J829", page 31

⇒ "1.6.5 Pin assignment for multimedia system operating unit E380", page 34

⇒ "1.6.6 Pin assignment for multimedia system operating unit 2 E499", page 35

⇒ "1.6.7 Pin assignment for multimedia system operating unit 2 E499, remote control", page 36

1.6.1 Pin assignment for display unit for front information display and operating unit control unit - J685-

Display unit for front information display and operating unit control unit - J685-

- 1 - 4-pin connector - T4dd- / 4-pin connector - T4de- from control unit 1 for information electronics - J794-
- 2 - 8-pin connector - T8ag-



Note

Contacts which are not listed are not used.

1 - 4-pin connector - T4dd- / 4-pin connector - T4de-

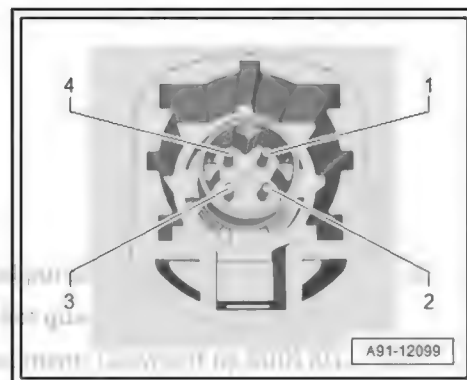
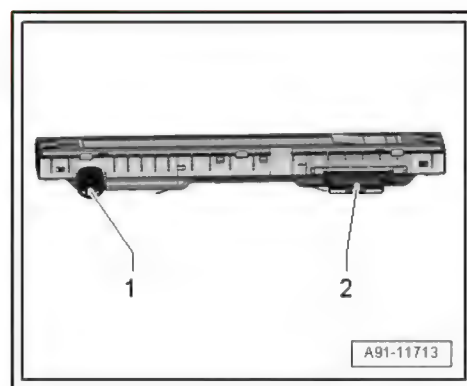
All pins are connected to the control unit 1 for information electronics - J794- .

Up to model year 2014

- 1 - Earth
- 2 - LVDS (+)
- 3 - LIN
- 4 - LVDS (-)

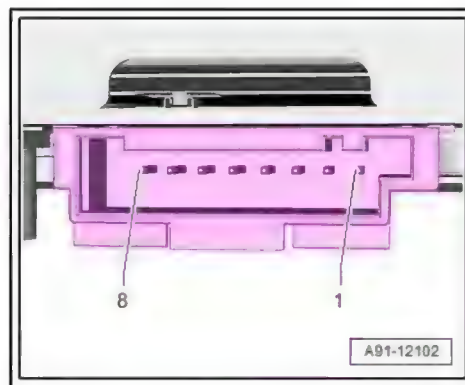
From model year 2015 onwards

- 1 - Earth
- 2 - LVDS (+)
- 3 - Earth
- 4 - LVDS (-)



2 - 8-pin connector - T8ag-

- 1 - Not used
- 2 - Not used
- 3 - Not used
- 4 - Terminal 30
- 5 - Terminal 31
- 6 - Not used
- 7 - CAN bus High to control unit 1 for information electronics - J794- , from model year 2015 onwards and 7UG
- 8 - CAN bus Low to control unit 1 for information electronics - J794- , from model year 2015 onwards and 7UG



1.6.2 Pin assignment for rear display -Y22- / -Y23-

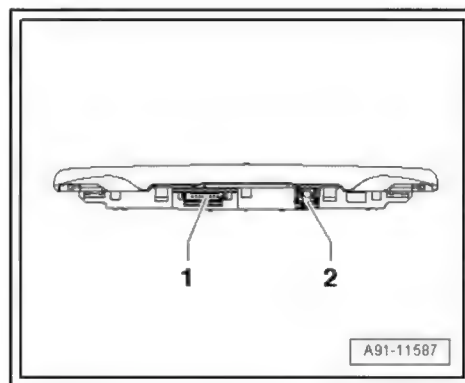
Multimedia system display unit 1 - Y22-

- 1 - 8-pin connector - T8ao-
- 2 - 4-pin connector - T4en-



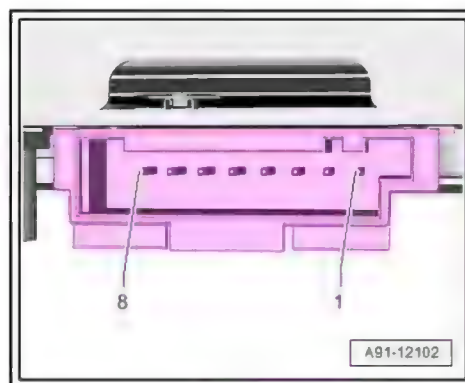
Note

Contacts which are not listed are not used.



1 - 8-pin connector - T8ao-

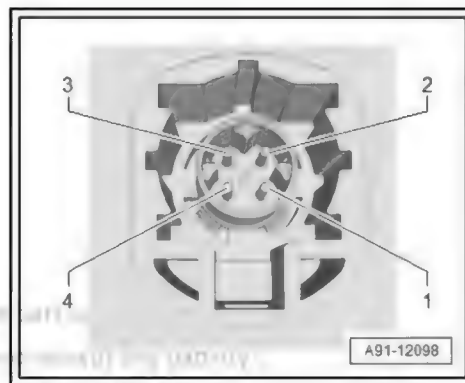
- 1 - Not used
- 2 - Not used
- 3 - Terminal 31
- 4 - Terminal 30
- 5 - Terminal 31



2 - 4-pin connector - T4en-

All pins are connected to the control unit 2 for information electronics - J829- .

- 1 - Earth
- 2 - LVDS (+)
- 3 - LIN
- 4 - LVDS (-)





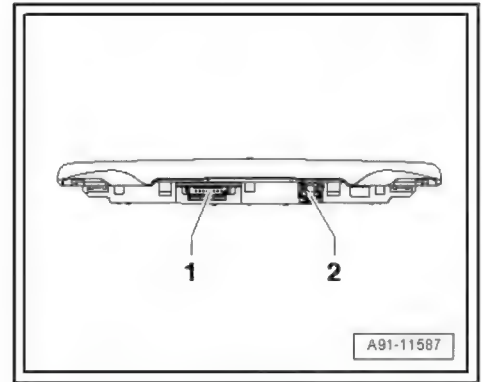
Multimedia system display unit 2 - Y23-

- 1 - 8-pin connector - T8ap-
- 2 - 4-pin connector - T4eo-



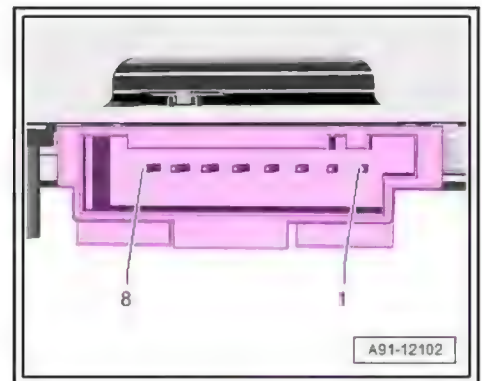
Note

Contacts which are not listed are not used.



1 - 8-pin connector - T8ap-

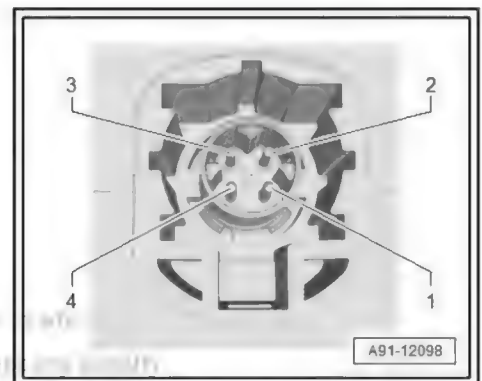
- 1 - Not used
- 2 - Not used
- 3 - Terminal 31
- 4 - Terminal 30
- 5 - Terminal 31



2 - 4-pin connector - T4eo-

All pins are connected to the control unit 2 for information electronics - J829- .

- 1 - Earth
- 2 - LVDS (+)
- 3 - LIN
- 4 - LVDS (-)



1.6.3 Pin assignment for MMI navigation system, 7T2

Control unit 1 for information electronics - J794-

1 - DAB connection from aerial amplifier 3 - R112- , digital radio aerial - R183- , Europe/ rest-of-world and QV3 only

- SAT connection from roof aerial - R216- , satellite aerial - R170- , QV8 and USA only

2 - GPS connection from roof aerial - R216-

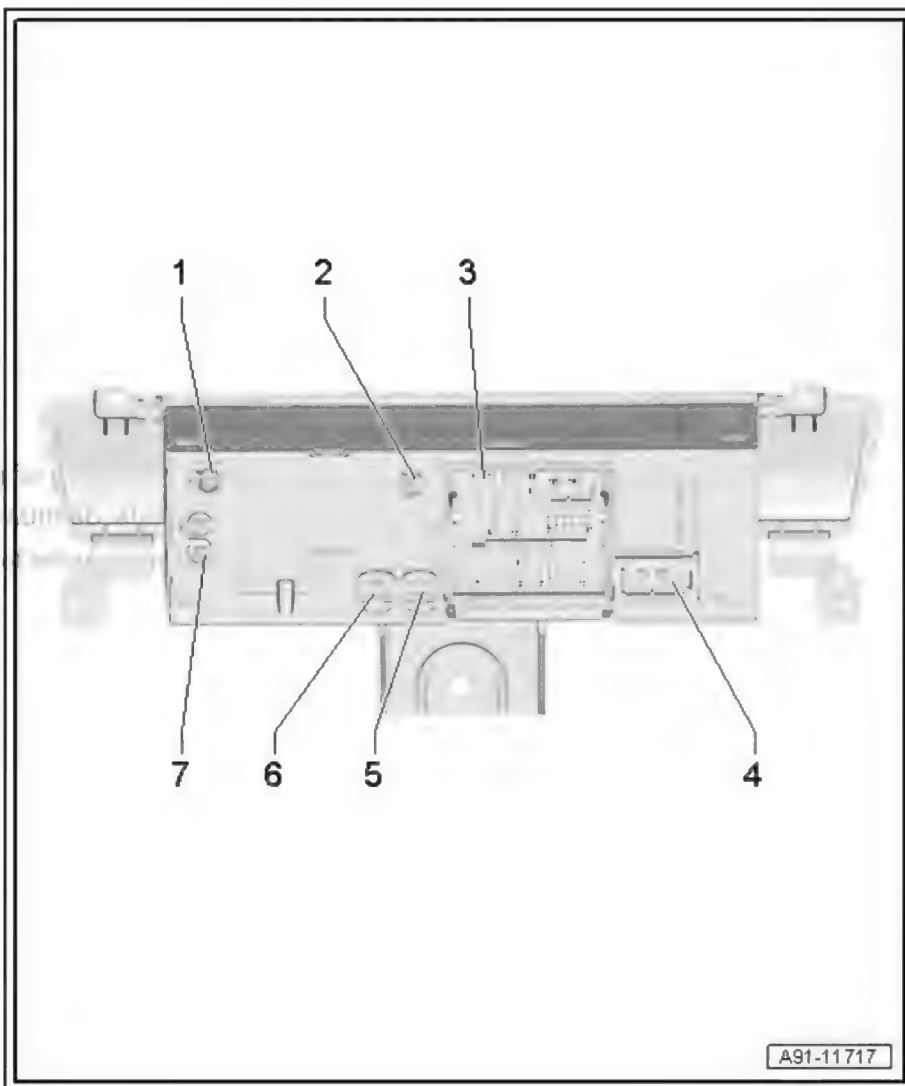
3 - Connection block with four multi-pin connectors

4 - MOST bus

5 - 4-pin connector - T4z- to connection for external audio sources - R199-

6 - 4-pin connector - T4df- to display unit for front information display and operating unit control unit - J685-

7 - Aerial connection, AM/FM/ FM2



Note

Contacts which are not listed are not used.

3 - Connection block with four multi-pin connectors

A - 8-pin connector - T8e-

1 - Loudspeaker (+), rear right

2 - Loudspeaker (+), front right

3 - Loudspeaker (+), front left

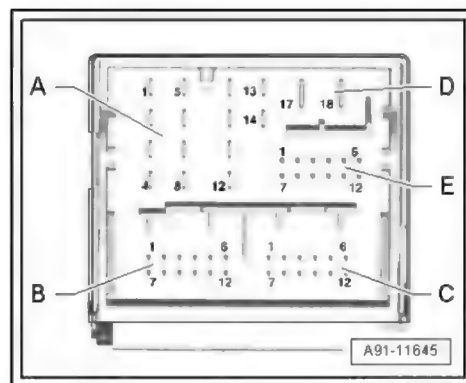
4 - Loudspeaker (+), rear left

5 - Loudspeaker (-), rear right

6 - Loudspeaker (-), front right

7 - Loudspeaker (-), front left

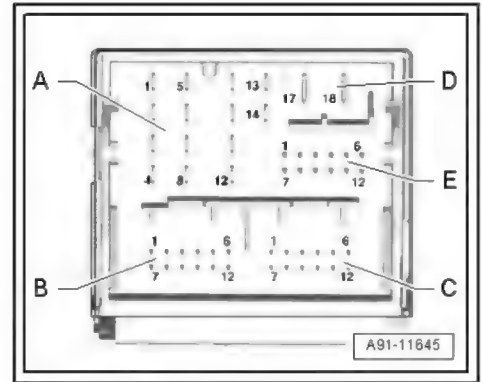
8 - Loudspeaker (-), rear left





B - 12-pin connector - T12c-

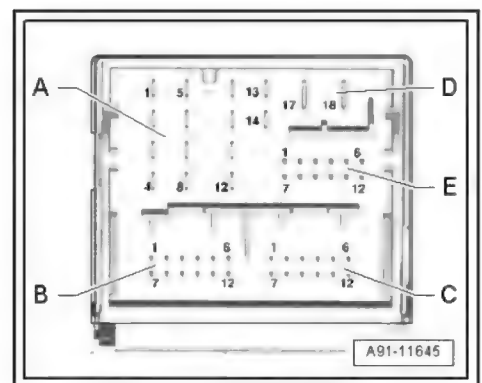
- 1 - Data from multimedia system operating unit - E380-
- 2 - RES BT multimedia system operating unit - E380-
- 3 - Not used
- 4 - Microphone input (+) from microphone unit in front roof module - R164- , front left microphone - R140-
- 5 - FBAS wire (-) from reversing camera system control unit - J772-
- 6 - DIAG signal from telephone bracket - R126-
- 7 - Data to multimedia system operating unit - E380-
- 8 - Wake-up multimedia system operating unit - E380-
- 9 - Res HU to multimedia system operating unit - E380-
- 10 - Not used
- 11 - FBAS wire (+) from reversing camera system control unit - J772-
- 12 - Microphone input (-) from microphone unit in front roof module - R164- , front left microphone - R140-



C - 12-pin connector - T12e-

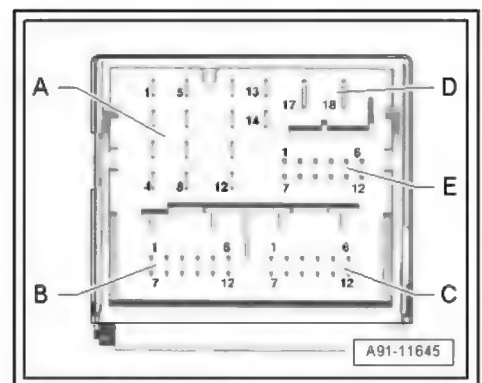
All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB, +5 V
- 4 - USB, earth
- 5 - iPod, ACC power
- 6 - Detect
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data



D - 8-pin connector - T8f-

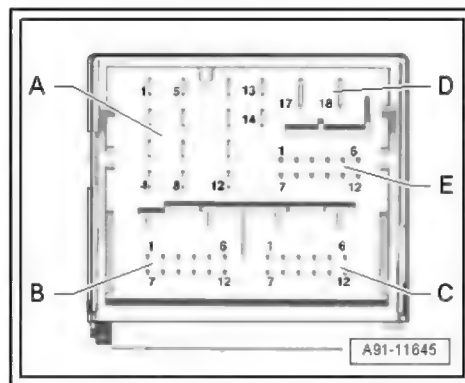
- 9 - Subwoofer - R211-
- 10 - Centre loudspeaker - R208-
- 13 - Subwoofer - R211-
- 14 - Centre loudspeaker - R208-
- 17 - Terminal 31
- 18 - Terminal 30



E - 12-pin connector - T12d-

7 - Open circuit diagnostic lead

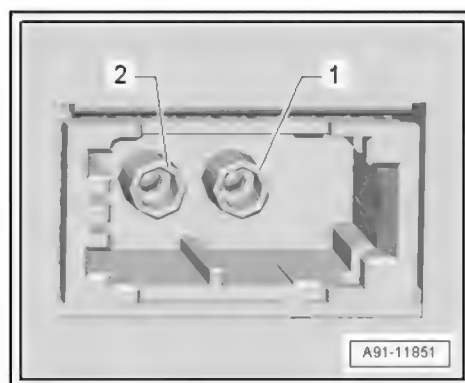
12 - Switch-on signal to telephone bracket - R126- / aerial amplifier for mobile telephone - R86-



4 - MOST bus

1 - Output

2 - Input



5 - 4-pin connector - T4z-

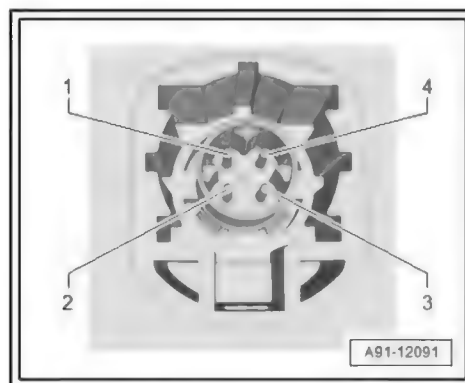
All pins are connected to the connection for external audio sources - R199- .

1 - D (+)

2 - iPod detected

3 - D (-)

4 - Earth



6 - 4-pin connector - T4df-

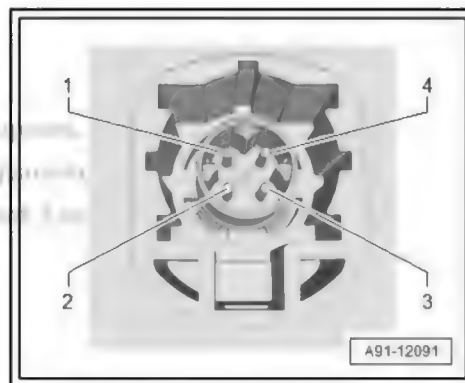
All pins are connected to the display unit for front information display and operating unit control unit - J685- .

1 - LVDS (-)

2 - LIN

3 - LVDS (+)

4 - Earth





7 - Aerial connection, AM/FM1/FM2

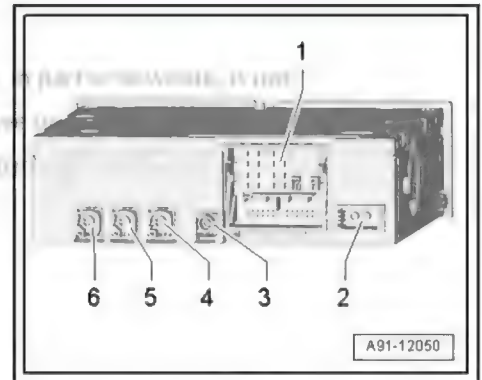
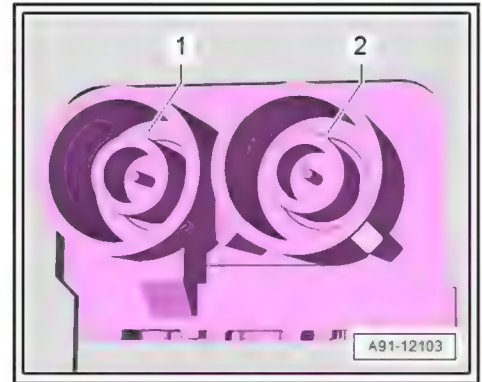
- 1 - Contact 2, AM/FM1 from aerial amplifier 2 - R111- , radio aerial 2 - R93-
- 2 - Contact 1, FM2 from aerial amplifier - R24- , aerial - R11-



1.6.4 Pin assignment for control unit 2 for information electronics - J829-

Control unit 2 for information electronics - J829-

- 1 - Connection block with four multi-pin connectors
- 2 - MOST bus
- 3 - FBAS input from DVD changer - R161-
- 4 - 4-pin connector - T4eh- to multimedia system display unit 1 - Y22- , left-side
- 5 - 4-pin connector - T4ek- to connection 2 for external audio sources - R231-
- 6 - 4-pin connector - T4ei- to multimedia system display unit 2 - Y23- , right-side



Note

Contacts which are not listed are not used.

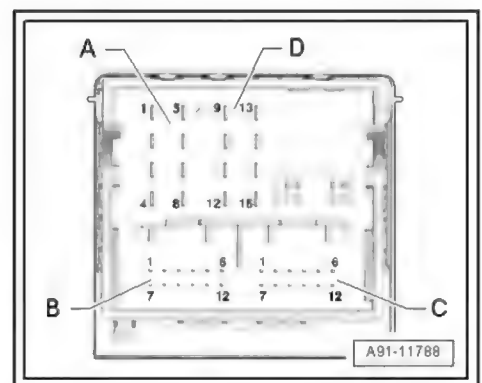
- 1 - Connection block with four multi-pin connectors

A - 8-pin connector - T8I-

3 - Wake-up to multimedia system operating unit 2 - E499-

6 - Res MU to multimedia system operating unit 2 - E499-

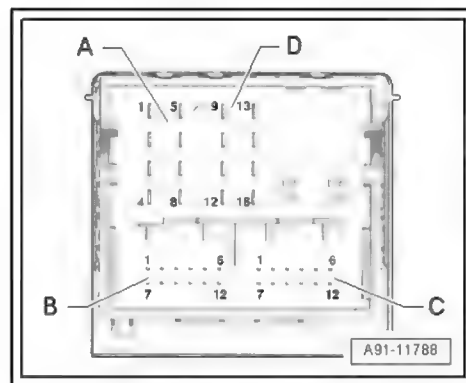
7 - Open circuit diagnostic lead



B - 12-pin connector - T12ad-

5 - FBAS wire (-) from TV tuner - R78-

11 - FBAS wire (+) from TV tuner - R78-



C - 12-pin connector - T12ae-

All pins are connected to the connection 2 for external audio sources - R231- .

1 - NF in, earth (low frequency)

2 - NF in, right-side (low frequency)

3 - USB, +5 V

4 - USB, earth

5 - iPod, ACC power

6 - Detect

7 - NF in, left-side (low frequency)

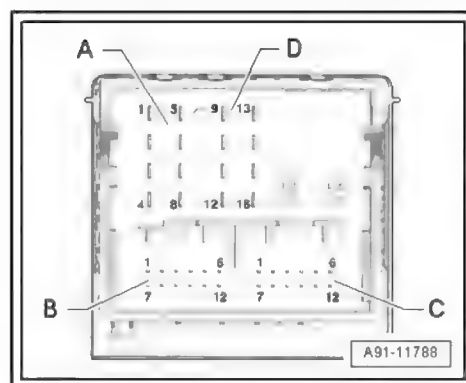
8 - NF in, screen earth (low frequency)

9 - FBAS wire (+)

10 - FBAS wire (-)

11 - iPod data

12 - iPod data



D - 8-pin connector - T8m-

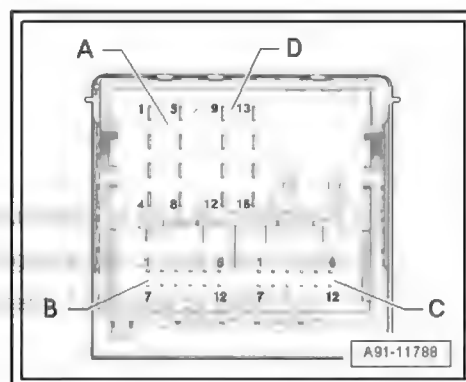
10 - Data from multimedia system operating unit 2 - E499-

11 - Data to multimedia system operating unit 2 - E499-

12 - Terminal 31

14 - Res BT from multimedia system operating unit 2 - E499-

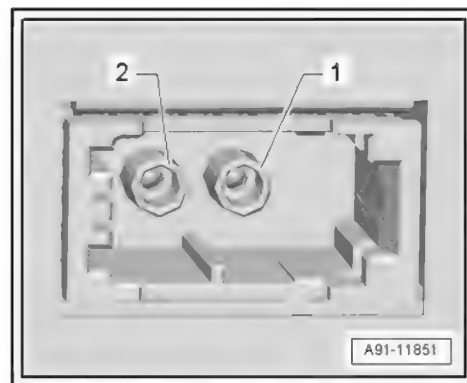
15 - Terminal 30





2 - MOST bus

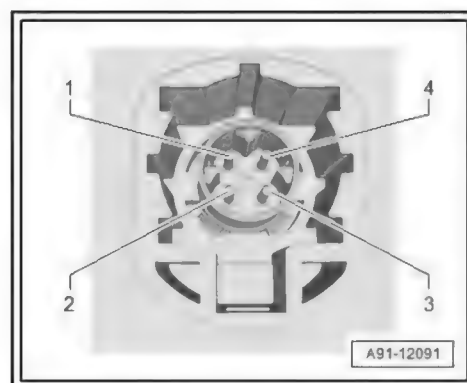
- 1 - Input
- 2 - Output



4 - 4-pin connector - T4eh-

All pins are connected to the multimedia system display unit 1 - Y22- .

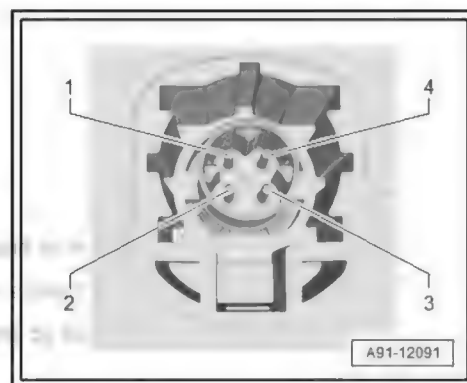
- 1 - LVDS (-)
- 2 - LIN
- 3 - LVDS (+)
- 4 - Earth



5 - 4-pin connector - T4ek-

All pins are connected to the connection 2 for external audio sources - R231- .

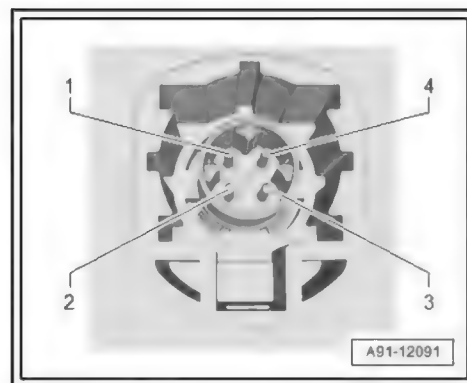
- 1 - D (+)
- 2 - iPod detected
- 3 - D (-)
- 4 - Earth



6 - 4-pin connector - T4ei-

All pins are connected to the multimedia system display unit 2 - Y23- .

- 1 - LVDS (-)
- 2 - LIN
- 3 - LVDS (+)
- 4 - Earth



1.6.5 Pin assignment for multimedia system operating unit - E380-

Multimedia system operating unit - E380-

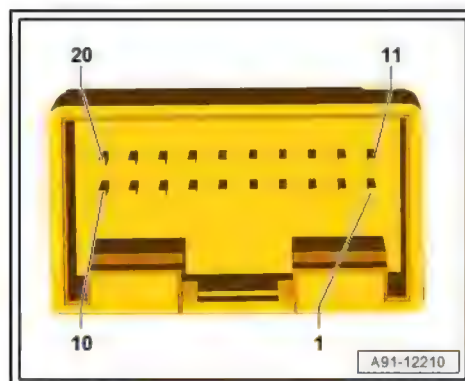


Note

Contacts which are not listed are not used.

20-pin connector - T20b-

- 1 - Not used
- 2 - Not used
- 3 - Display mounting, 8-pin connector - T8o-
- 4 - Close display limit switch - F331- , 8-pin connector - T8o-
- 5 - Open display limit switch - F330- , 8-pin connector - T8o-
- 6 - Wake-up to control unit 1 for information electronics - J794-
- 7 - Terminal 30
- 8 - Terminal 31
- 9 - Not used
- 10 - Display unit button - E506- in dash panel
- 11 - Not used
- 12 - Not used
- 13 - RES HU to control unit 1 for information electronics - J794-
- 14 - RES BT to control unit 1 for information electronics - J794-
- 15 - Data from control unit 1 for information electronics - J794-
- 16 - Data to control unit 1 for information electronics - J794-
- 17 - Not used
- 18 - Not used
- 19 - Open and close display motor - V301- , 8-pin connector - T8o-
- 20 - Open and close display motor - V301- , 8-pin connector - T8o-





1.6.6 Pin assignment for multimedia system operating unit 2 - E499-

Multimedia system operating unit 2 - E499-

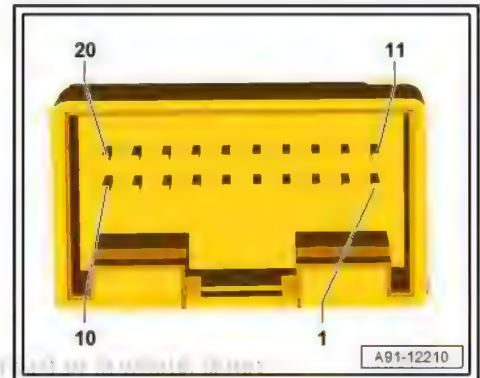


Note

Contacts which are not listed are not used.

20-pin connector - T20i-

- 1 - NF in 1, left-side (low frequency) from radio - R- / control unit 1 for information electronics - J794-
- 2 - NF in 1, right-side (low frequency) from radio - R- / control unit 1 for information electronics - J794-
- 3 - NF in 1, earth (low frequency) from radio - R- / control unit 1 for information electronics - J794-
- 4 - Not used
- 5 - Diag 1/2 to radio - R- / control unit 1 for information electronics - J794-
- 6 - Wake-up to control unit 2 for information electronics - J829-
- 7 - Terminal 30
- 8 - Terminal 31
- 9 - Not used
- 10 - Not used
- 11 - Diag 1 to radio - R- / control unit 1 for information electronics - J794-
- 12 - Diag 2 to radio - R- / control unit 1 for information electronics - J794-
- 13 - RES HU to control unit 2 for information electronics - J829-
- 14 - Res MU to control unit 2 for information electronics - J829-
- 15 - Data from control unit 2 for information electronics - J829-
- 16 - Data to control unit 2 for information electronics - J829-
- 17 - Not used
- 18 - NF in 2, earth (low frequency) from radio - R- / control unit 1 for information electronics - J794-
- 19 - NF in 2, left-side (low frequency) from radio - R- / control unit 1 for information electronics - J794-
- 20 - NF in 2, right-side (low frequency) from radio - R- / control unit 1 for information electronics - J794-



1.6.7 Pin assignment for multimedia system operating unit 2 - E499- , remote control

Multimedia system operating unit 2 - E499-

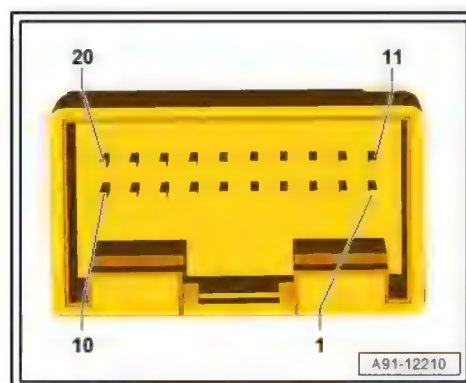


Note

Contacts which are not listed are not used.

20-pin connector - T20i-

- 1 - Not used
- 2 - Not used
- 3 - Not used
- 4 - Terminal 58s
- 5 - Not used
- 6 - Wake-up from control unit 1 for information electronics - J794-
- 7 - Terminal 30
- 8 - Terminal 31
- 9 - Terminal 15





2 Sound system

⇒ [“2.1 Layout - sound system”, page 37](#)

⇒ [“2.2 Overview of fitting locations - sound system”, page 46](#)

⇒ [“2.3 Overview of fitting locations - ANC microphones”, page 57](#)

⇒ [“2.4 Removing and installing digital sound package control unit/amplifier”, page 58](#)

⇒ [“2.5 Removing and installing rear treble loudspeakers R14 / R16”, page 70](#)

⇒ [“2.6 Removing and installing front treble loudspeakers R20 / R22”, page 70](#)

⇒ [“2.7 Removing and installing rear mid-range loudspeakers”, page 72](#)

⇒ [“2.8 Removing and installing front mid-range loudspeakers”, page 73](#)

⇒ [“2.9 Removing and installing rear mid-range and bass loudspeakers”, page 74](#)

⇒ [“2.10 Removing and installing rear bass loudspeakers R15 / R17”, page 76](#)

⇒ [“2.11 Removing and installing front bass loudspeakers R21 / R23”, page 78](#)

⇒ [“2.12 Removing and installing subwoofer R211”, page 81](#)

⇒ [“2.13 Removing and installing effect loudspeakers”, page 85](#)

⇒ [“2.14 Removing and installing centre loudspeaker”, page 88](#)

⇒ [“2.15 Removing and installing ANC microphones”, page 89](#)

⇒ [“2.16 Pin assignment”, page 90](#)

2.1 Layout - sound system

The following systems are available:

- ◆ 8RX - Sound system basic ⇒ [page 37](#)
- ◆ 9VD - Sound system standard, up to model year 2014 ⇒ [page 38](#)
- ◆ 9VD - Sound system standard, EP0 (without ANC), from model year 2015 onwards ⇒ [page 38](#)
- ◆ 9VD - Sound system standard, EP1 (with ANC), from model year 2015 onwards ⇒ [page 39](#)
- ◆ 8RY - Sound system premium, BOSE, up to model year 2014 ⇒ [page 40](#)
- ◆ 8RY - Sound system premium, BOSE, from model year 2015 onwards ⇒ [page 40](#)
- ◆ 8RF - Sound system advanced, Bang & Olufsen, up to model year 2014 ⇒ [page 42](#)
- ◆ 8RF - Sound system advanced, Bang & Olufsen, from model year 2015 onwards ⇒ [page 44](#)

8RX - Sound system basic

- ◆ One loudspeaker in each front door (left and right)
- ◆ One loudspeaker on each side of dash panel

- ◆ Two loudspeakers in each rear door (left and right)
- 9VD - Sound system standard, up to model year 2014
- ◆ One loudspeaker in each front door (left and right)
- ◆ Three loudspeakers in dash panel (left, centre and right)
- ◆ Two loudspeakers in each rear door (left and right)
- ◆ Subwoofer - R211- in rear shelf, Saloon
- ◆ Subwoofer - R211- in spare wheel well, Avant

1 - Radio - R- in rear left of luggage compartment, MMI

Control unit 1 for information electronics - J794- in dash panel, RMC

2 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22- in dash panel

3 - Front left mid-range and bass loudspeaker - R101- / front right mid-range and bass loudspeaker - R102- in front doors (bottom)

4 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16- in rear doors (top)

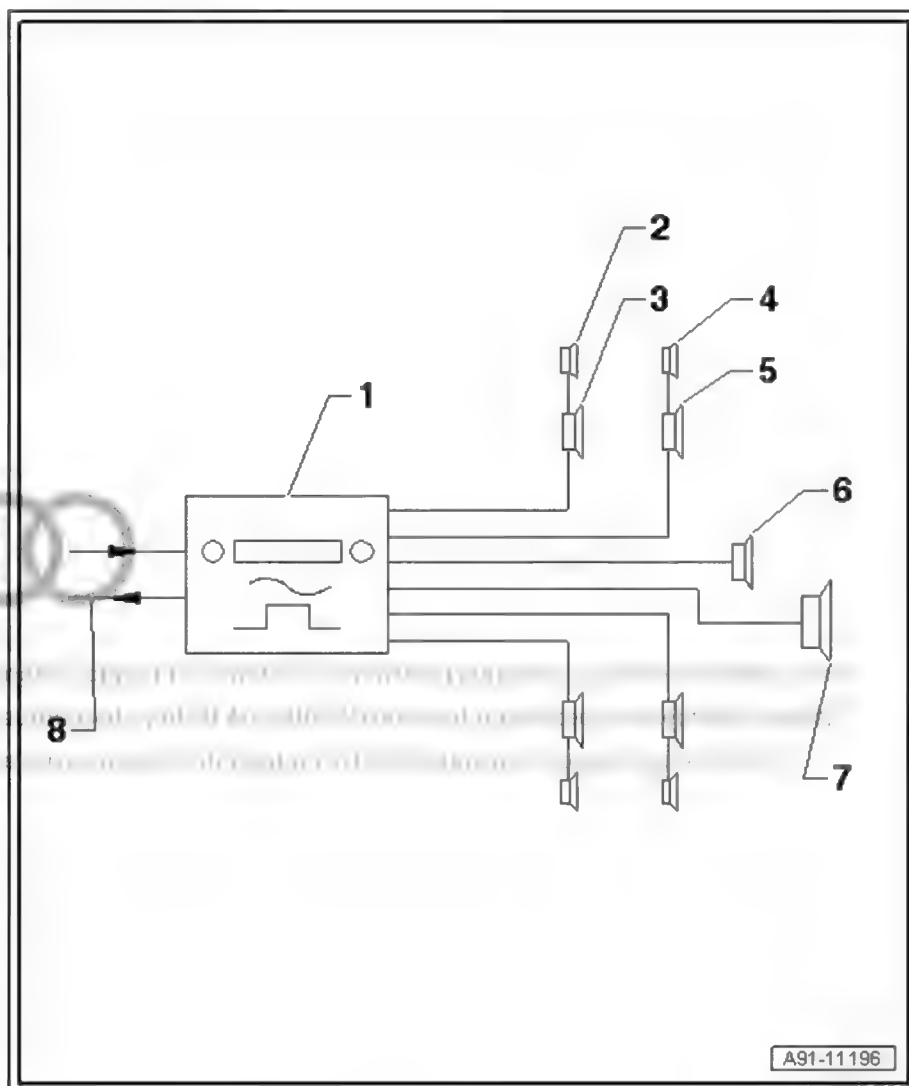
5 - Rear left mid-range and bass loudspeaker - R159- / rear right mid-range and bass loudspeaker - R160- in rear doors (bottom)

6 - Centre loudspeaker - R208- in dash panel (centre)

7 - Subwoofer - R211- in rear shelf, Saloon

Subwoofer - R211- in spare wheel well, Avant

8 - MOST bus



9VD - Sound system standard, EP0 (without ANC), from model year 2015 onwards

- ◆ One loudspeaker in each front door (left and right)
- ◆ Three loudspeakers in dash panel (left, centre and right)
- ◆ Two loudspeakers in each rear door (left and right)
- ◆ Subwoofer - R211- in rear shelf, Saloon
- ◆ Subwoofer - R211- in spare wheel well, Avant



1 - Control unit 1 for information electronics - J794- in dash panel

2 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22- in dash panel

3 - Front left bass loudspeaker - R21- / front right bass loudspeaker - R23- in front doors (bottom)

4 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16- in rear doors (top)

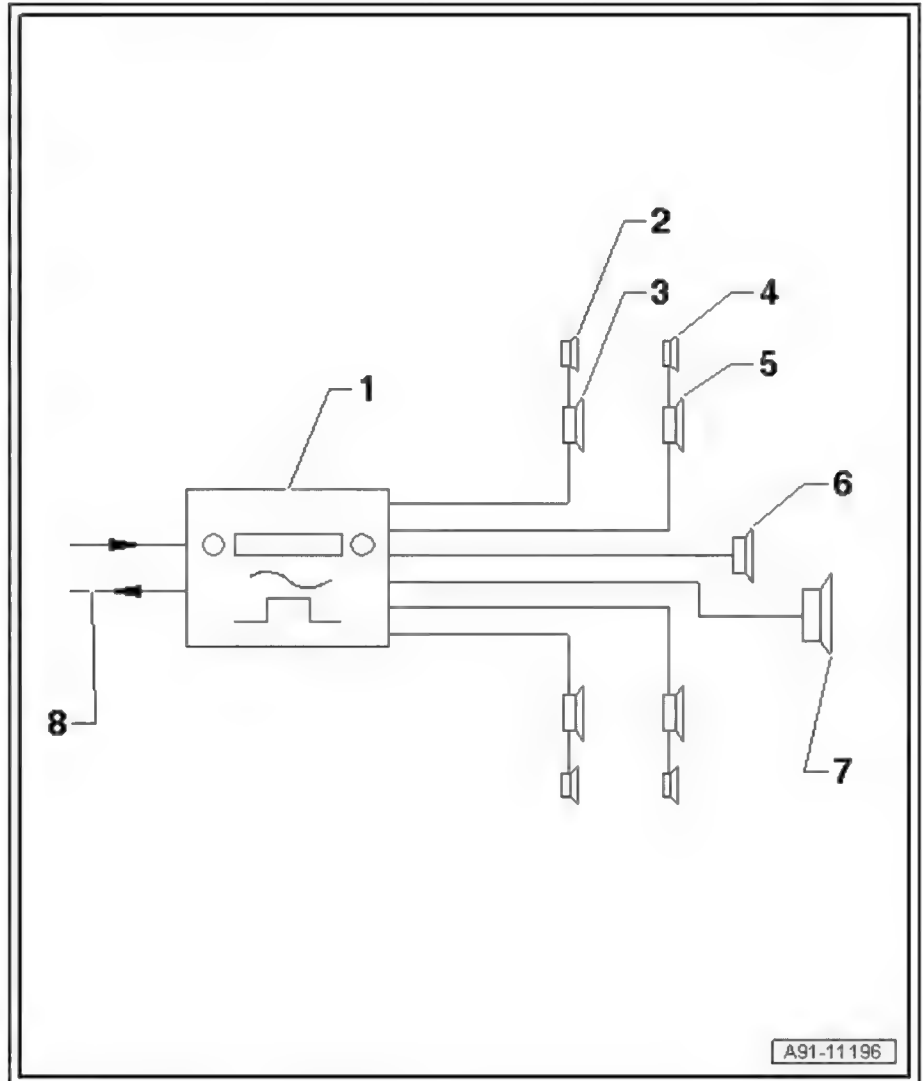
5 - Rear left bass loudspeaker - R15- / rear right bass loudspeaker - R17- in rear doors (bottom)

6 - Centre loudspeaker - R208- in dash panel (centre)

7 - Subwoofer - R211- in rear shelf, Saloon

Subwoofer - R211- in spare wheel well, Avant

8 - MOST bus



9VD - Sound system standard, EP1 (with ANC), from model year 2015 onwards

- ◆ One loudspeaker in each front door (left and right)
- ◆ Three loudspeakers in dash panel (left, centre and right)
- ◆ Two loudspeakers in each rear door (left and right)
- ◆ Subwoofer - R211- in rear shelf, Saloon
- ◆ Subwoofer - R211- in spare wheel well, Avant
- ◆ Digital sound package control unit - J525-
- ◆ ANC microphones in headliner

1 - Digital sound package control unit - J525- in luggage compartment (rear left)

2 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22- in dash panel

3 - Front left bass loudspeaker - R21- / front right bass loudspeaker - R23- in front doors (bottom)

4 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16- in rear doors (top)

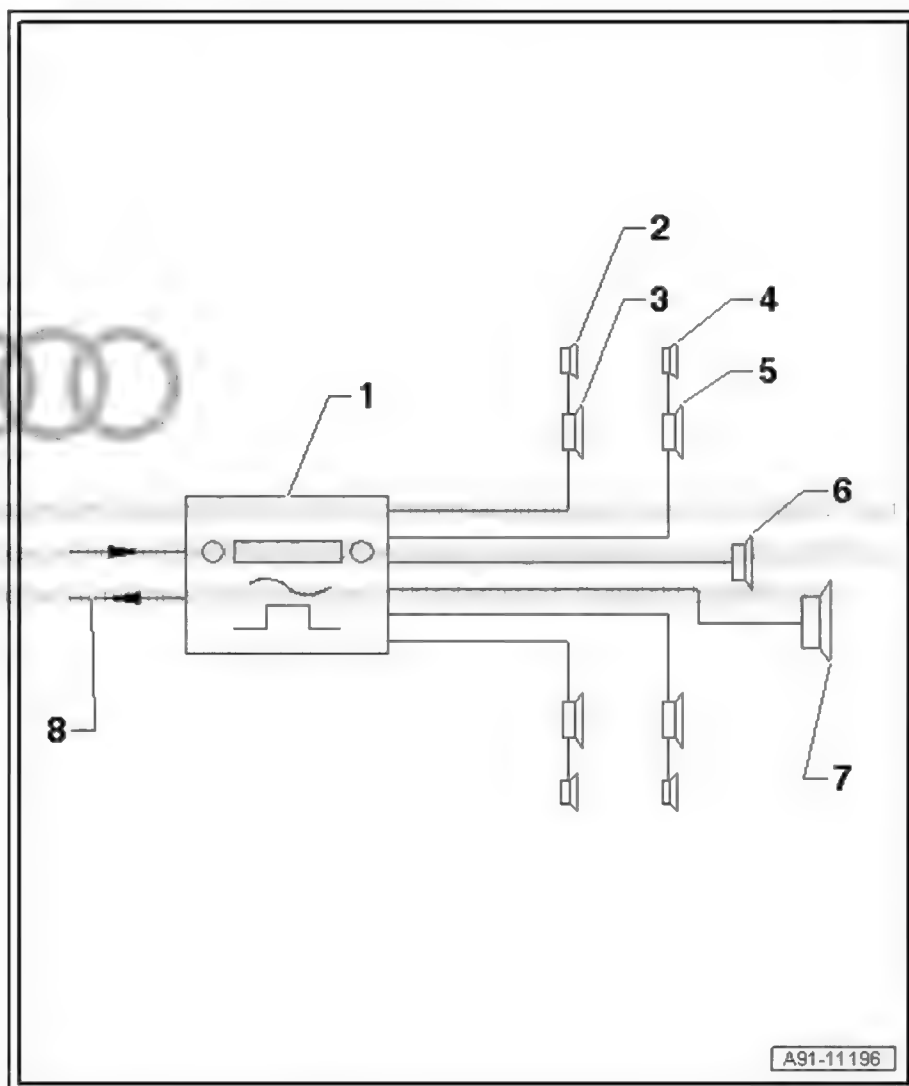
5 - Rear left bass loudspeaker - R15- / rear right bass loudspeaker - R17- in rear doors (bottom)

6 - Centre loudspeaker - R208- in dash panel (centre)

7 - Subwoofer - R211- in rear shelf, Saloon

Subwoofer - R211- in spare wheel well, Avant

8 - MOST bus



8RY - Sound system premium, BOSE, up to model year 2014

- ◆ Two loudspeakers in each front door (left and right)
- ◆ Three loudspeakers in dash panel (left, centre and right)
- ◆ Two loudspeakers in each rear door (left and right)
- ◆ One loudspeaker on each side of rear shelf, Saloon
- ◆ One loudspeaker in D-pillars (left and right), Avant
- ◆ Subwoofer - R211- in rear shelf, Saloon
- ◆ Subwoofer - R211- in spare wheel well, Avant
- ◆ Digital sound package control unit - J525-

The sound system is available with ANC (EP1) or without ANC (EP0).



1 - Digital sound package control unit - J525- in luggage compartment (rear left)

2 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22- in dash panel

3 - Front left mid-range loudspeaker - R103- / front right mid-range loudspeaker - R104- in front doors (centre)

4 - Front left bass loudspeaker - R21- / front right bass loudspeaker - R23- in front doors (bottom)

5 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16- in rear doors (top)

6 - Rear left mid-range and bass loudspeaker - R159- / rear right mid-range and bass loudspeaker - R160- in rear doors (bottom)

7 - Centre loudspeaker - R208- in dash panel (centre)

8 - Left effect loudspeaker - R209- / right effect loudspeaker - R210- in rear shelf (left and right), Saloon

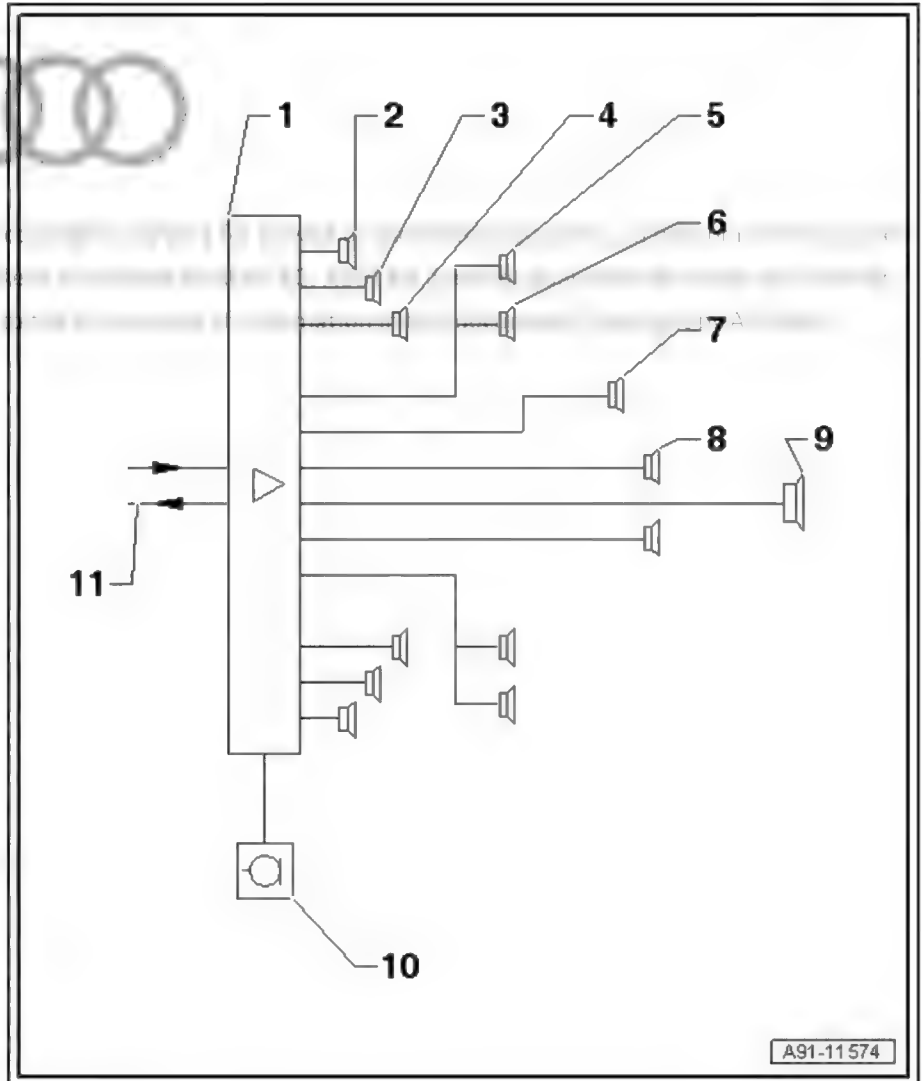
- Left effect loudspeaker - R209- / right effect loudspeaker - R210- in left and right D-pillars, Avant

9 - Subwoofer - R211- in rear shelf, Saloon

Subwoofer - R211- in spare wheel well, Avant

10 - Internal microphone - R74- , microphone unit in front roof module - R164- in front interior light - W1-
- ANC microphones in headliner

11 - MOST bus



8RY - Sound system premium, BOSE, from model year 2015 onwards

- ◆ Two loudspeakers in each front door (left and right)
- ◆ Three loudspeakers in dash panel (left, centre and right)
- ◆ Two loudspeakers in each rear door (left and right)
- ◆ One loudspeaker on each side of rear shelf, Saloon
- ◆ One loudspeaker in D-pillars (left and right), Avant
- ◆ Subwoofer - R211- in rear shelf, Saloon
- ◆ Subwoofer - R211- in spare wheel well, Avant
- ◆ Digital sound package control unit - J525-

The sound system is available with ANC (EP1) or without ANC (EP0).

1 - Digital sound package control unit - J525- in luggage compartment (rear left)

2 - Front left loudspeaker - R2- / front right loudspeaker - R3- in dash panel

3 - Front left mid-range loudspeaker - R103- / front right mid-range loudspeaker - R104- in front doors (centre)

4 - Front left bass loudspeaker - R21- / front right bass loudspeaker - R23- in front doors (bottom)

5 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16- in rear doors (top)

6 - Rear left bass loudspeaker - R15- / rear right bass loudspeaker - R17- in rear doors (bottom)

7 - Centre loudspeaker - R208- in dash panel (centre)

8 - Left effect loudspeaker - R209- / right effect loudspeaker - R210- in rear shelf (left and right), Saloon

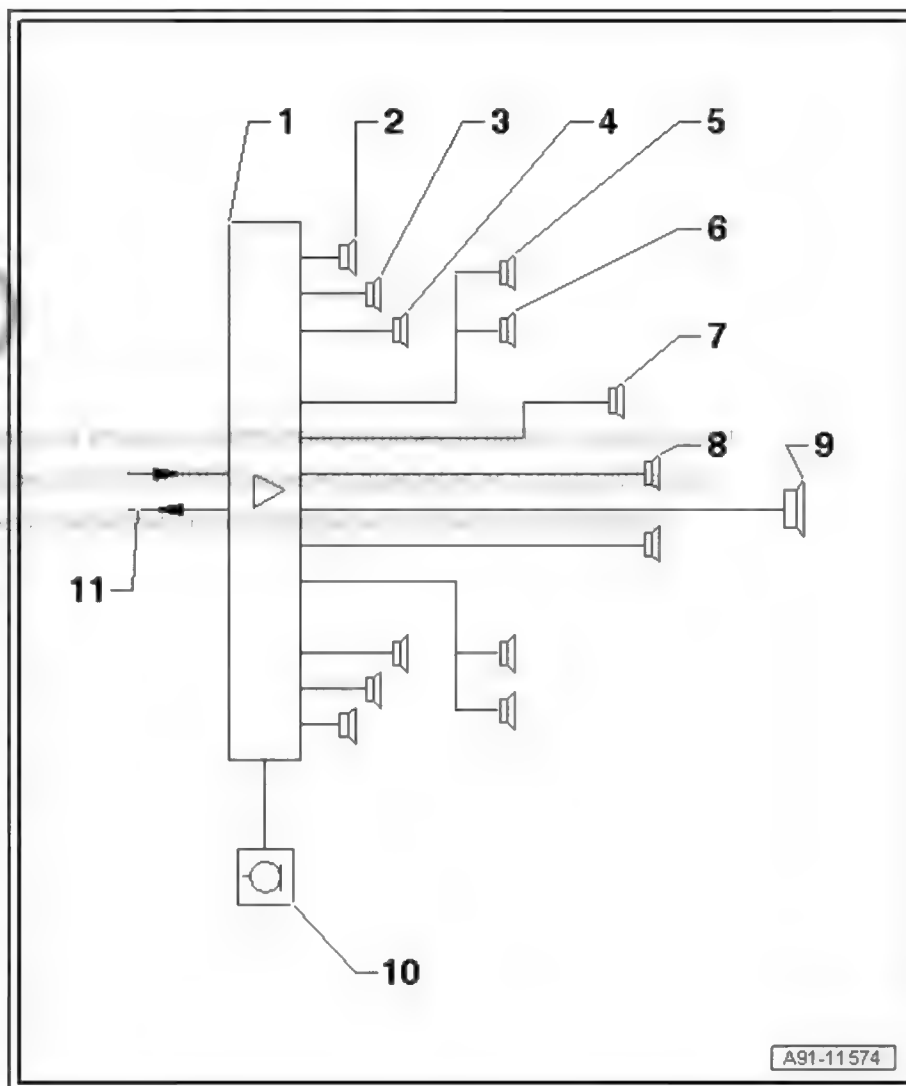
- Left effect loudspeaker - R209- / right effect loudspeaker - R210- in left and right D-pillars, Avant

9 - Subwoofer - R211- in rear shelf, Saloon

Subwoofer - R211- in spare wheel well, Avant

10 - Internal microphone - R74- , microphone unit in front roof module - R164- in front interior light - W1-
- ANC microphones in headliner

11 - MOST bus



8RF - Sound system advanced, Bang & Olufsen, up to model year 2014

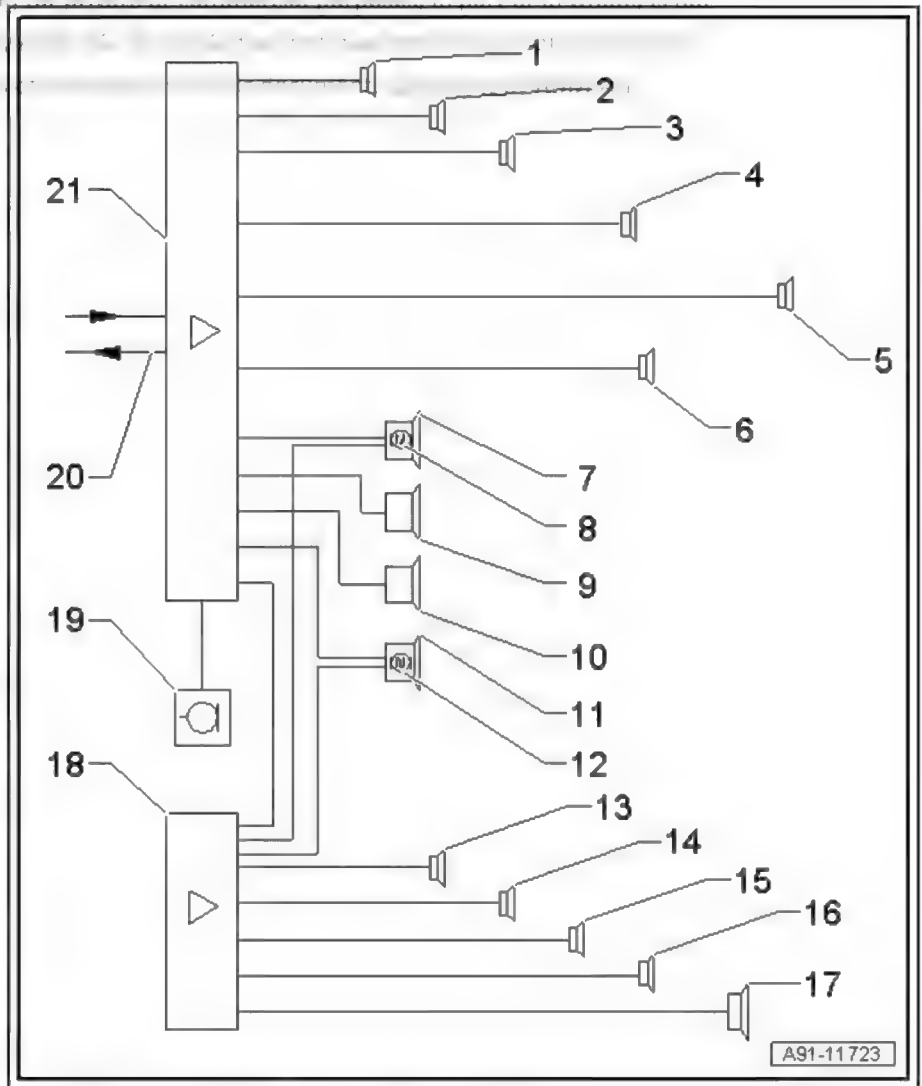
- ◆ Two loudspeakers in each front door (left and right)
- ◆ One loudspeaker on each side of dash panel
- ◆ Two loudspeakers in centre of dash panel
- ◆ Two loudspeakers in each rear door (left and right)
- ◆ One loudspeaker on each side of rear shelf, Saloon
- ◆ One loudspeaker in D-pillars (left and right), Avant
- ◆ Subwoofer - R211- in rear shelf, Saloon



- ◆ Subwoofer - R211- in spare wheel well, Avant
- ◆ Digital sound package control unit - J525-
- ◆ Digital sound package control unit 2 - J787-

The sound system is available with ANC (EP1) or without ANC (EP0).

- 1 - Front left mid-range loudspeaker - R103- in front left door (centre)
- 2 - Front right mid-range loudspeaker - R104- in front right door (centre)
- 3 - Rear left treble loudspeaker - R14- in rear left door (top)
- 4 - Rear right treble loudspeaker - R16- in rear right door (top)
- 5 - Left effect loudspeaker - R209- in rear shelf, Saloon
- Left effect loudspeaker - R209- in D-pillar, Avant
- 6 - Right effect loudspeaker - R210- in rear shelf, Saloon
- Right effect loudspeaker - R210- in D-pillar, Avant
- 7 - Front left treble loudspeaker - R20- in dash panel (left-side)
- 8 - Control motor for front left treble speaker - V344-
- 9 - Centre loudspeaker - R208- in dash panel (centre)
- 10 - Centre loudspeaker 2 - R219- in dash panel (centre)
- 11 - Front right treble loudspeaker - R22- in dash panel (right-side)
- 12 - Control motor for front right treble loudspeaker - V345-



- 13 - Rear left mid-range and bass loudspeaker - R159- in rear left door (bottom)
- 14 - Rear right mid-range and bass loudspeaker - R160- in rear right door (bottom)
- 15 - Front left bass loudspeaker - R21- in front left door (bottom)
- 16 - Front right bass loudspeaker - R23- in front right door (bottom)
- 17 - Subwoofer - R211- in rear shelf, Saloon

Subwoofer - R211- in spare wheel well, Avant

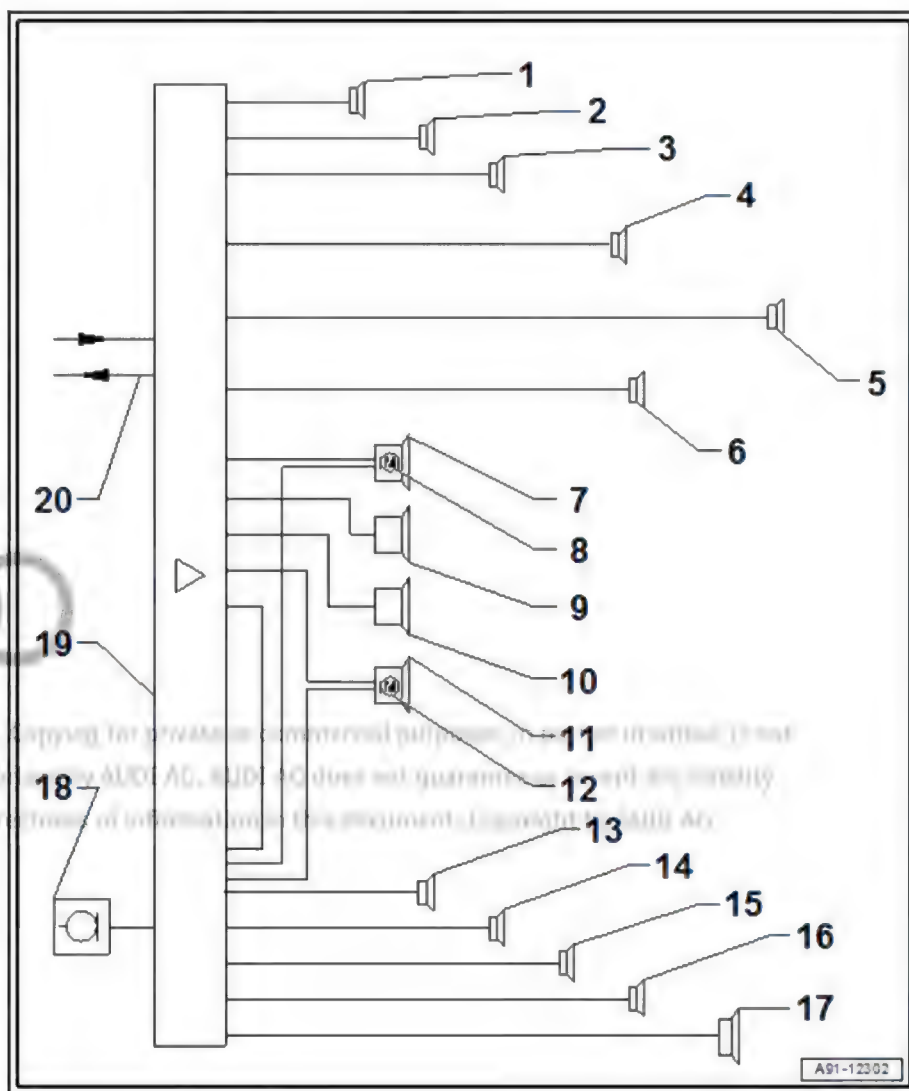
- 18 - Digital sound package control unit 2 - J787- in luggage compartment (rear left)
- 19 - Internal microphone - R74- , microphone unit in front roof module - R164- in front interior light - W1-
- ANC microphones in headliner
- 20 - MOST bus
- 21 - Digital sound package control unit - J525- in luggage compartment (rear left)

8RF - Sound system advanced, Bang & Olufsen, from model year 2015 onwards

- ◆ Two loudspeakers in each front door (left and right)
- ◆ One loudspeaker on each side of dash panel
- ◆ Two loudspeakers in centre of dash panel
- ◆ Two loudspeakers in each rear door (left and right)
- ◆ One loudspeaker on each side of rear shelf, Saloon
- ◆ One loudspeaker in D-pillars (left and right), Avant
- ◆ Subwoofer - R211- in rear shelf, Saloon
- ◆ Subwoofer - R211- in spare wheel well, Avant
- ◆ Digital sound package control unit - J525-

The sound system is available with ANC (EP1) or without ANC (EP0).

- 1 - Front left mid-range loudspeaker - R103- in front left door (centre)
- 2 - Front right mid-range loudspeaker - R104- in front right door (centre)
- 3 - Rear left mid-range loudspeaker - R105- in rear left door (top)
- 4 - Rear right mid-range loudspeaker - R106- in rear right door (top)
- 5 - Left effect loudspeaker - R209- in rear shelf, Saloon
- Left effect loudspeaker - R209- in D-pillar, Avant
- 6 - Right effect loudspeaker - R210- in rear shelf, Saloon
- Right effect loudspeaker - R210- in D-pillar, Avant





- 7 - Front left treble loudspeaker - R20- in dash panel (left-side)
- 8 - Control motor for front left treble speaker - V344-
- 9 - Centre loudspeaker - R208- in dash panel (centre)
- 10 - Centre loudspeaker 2 - R219- in dash panel (centre)
- 11 - Front right treble loudspeaker - R22- in dash panel (right-side)
- 12 - Control motor for front right treble loudspeaker - V345-
- 13 - Rear left bass loudspeaker - R15- in rear left door (bottom)
- 14 - Rear right bass loudspeaker - R17- in rear right door (bottom)
- 15 - Front left bass loudspeaker - R21- in front left door (bottom)
- 16 - Front right bass loudspeaker - R23- in front right door (bottom)
- 17 - Subwoofer - R211- in rear shelf, Saloon
Subwoofer - R211- in spare wheel well, Avant
- 18 - Internal microphone - R74- , microphone unit in front roof module - R164- in front interior light - W1-
- ANC microphones in headliner
- 19 - Digital sound package control unit - J525- in luggage compartment (rear left)
- 20 - MOST bus

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.

If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .





2.2 Overview of fitting locations - sound system

⇒ [“2.2.1 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Saloon”, page 46](#)

⇒ [“2.2.2 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Avant”, page 48](#)

⇒ [“2.2.3 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Saloon”, page 50](#)

⇒ [“2.2.4 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Avant”, page 52](#)

⇒ [“2.2.5 Overview of fitting locations - sound system, sound amplifiers, microphones \(BOSE\), up to model year 2014”, page 53](#)

⇒ [“2.2.6 Overview of fitting locations - sound system, sound amplifiers, microphones \(standard/BOSE\), from model year 2015 onwards”, page 54](#)

⇒ [“2.2.7 Overview of fitting locations - sound system, sound amplifiers, microphones \(Bang & Olufsen\), up to model year 2014”, page 55](#)

⇒ [“2.2.8 Overview of fitting locations - sound system, sound amplifiers, microphones \(Bang & Olufsen\), from model year 2015 onwards”, page 56](#)

2.2.1 Overview of fitting locations - sound system, loudspeakers (standard/BOSE), Saloon



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1 - Front left bass loudspeaker - R21- / front right bass loudspeaker - R23-, 9VD

- ☐ Removing and installing
⇒ [page 78](#)

2 - Bolt

- ☐ 4x
- ☐ 3 Nm

3 - Bolt

- ☐ 2x
- ☐ 3 Nm

4 - Front left mid-range loudspeaker - R103- / front right mid-range loudspeaker - R104-, 8RY

- ☐ Removing and installing
⇒ [page 73](#)

5 - Bolt

- ☐ 2x
- ☐ 2 Nm

6 - Left effect loudspeaker - R209- / right effect loudspeaker - R210-, 8RY

- ☐ Removing and installing
⇒ [page 85](#)

7 - Subwoofer - R211-, standard

- ☐ Removing and installing
⇒ [page 81](#)

8 - Bolt

- ☐ 4x
- ☐ 3 Nm

9 - Subwoofer - R211-, 8RY

- ☐ Removing and installing ⇒ [page 82](#)

10 - Bolt

- ☐ 4x
- ☐ 3 Nm

11 - Rear left mid-range and bass loudspeaker - R159- / rear right mid-range and bass loudspeaker - R160-

- ☐ Removing and installing ⇒ [page 74](#)

- Rear left bass loudspeaker - R15- / rear right bass loudspeaker - R17-

- ☐ Removing and installing ⇒ [page 76](#)

12 - Bolt

- ☐ 3x
- ☐ 3 Nm

13 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16-

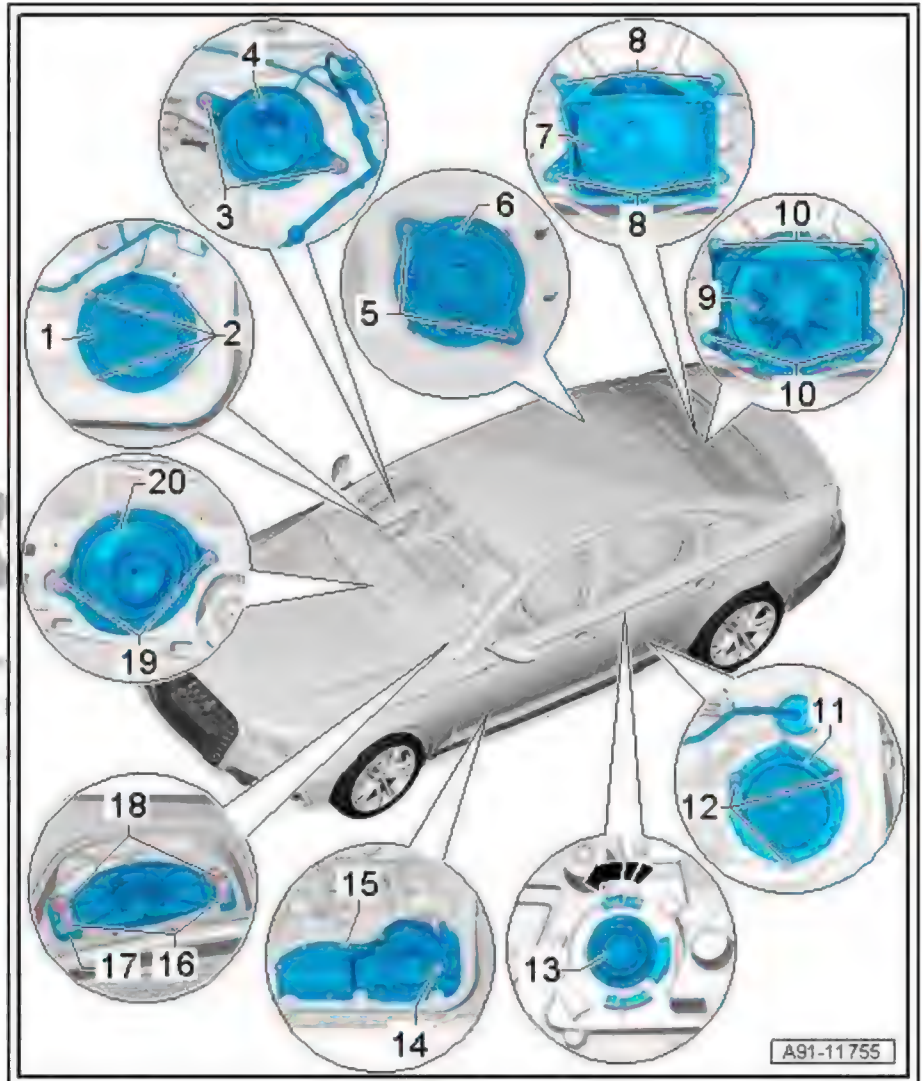
- ☐ Removing and installing ⇒ [page 70](#)

14 - Front left bass loudspeaker - R21- / front right bass loudspeaker - R23-, 8RY

- ☐ Removing and installing ⇒ [page 79](#)

15 - Bolt

- ☐ 10x



- ☐ 3 Nm
- 16 - Centring pin
- 17 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22-
 - ☐ Removing and installing ⇒ [page 70](#)
- 18 - Bolt
 - ☐ 2x
 - ☐ 2 Nm
- 19 - Bolt
 - ☐ 2x
 - ☐ 2 Nm
- 20 - Centre loudspeaker - R208-
 - ☐ Removing and installing ⇒ [page 88](#)

2.2.2 Overview of fitting locations - sound system, loudspeakers (standard/BOSE), Avant

- 1 - Front left bass loudspeaker - R21- / front right bass loudspeaker - R23-, 9VD

- ☐ Removing and installing ⇒ [page 78](#)

- 2 - Bolt

- ☐ 4x
- ☐ 3 Nm

- 3 - Bolt

- ☐ 2x
- ☐ 3 Nm

- 4 - Front left mid-range loudspeaker - R103- / front right mid-range loudspeaker - R104-, 8RY

- ☐ Removing and installing ⇒ [page 73](#)

- 5 - Bolt

- ☐ 2x
- ☐ 2 Nm

- 6 - Left effect loudspeaker - R209- / right effect loudspeaker - R210-, 8RY

- ☐ Removing and installing ⇒ [page 87](#)

- 7 - Bolt

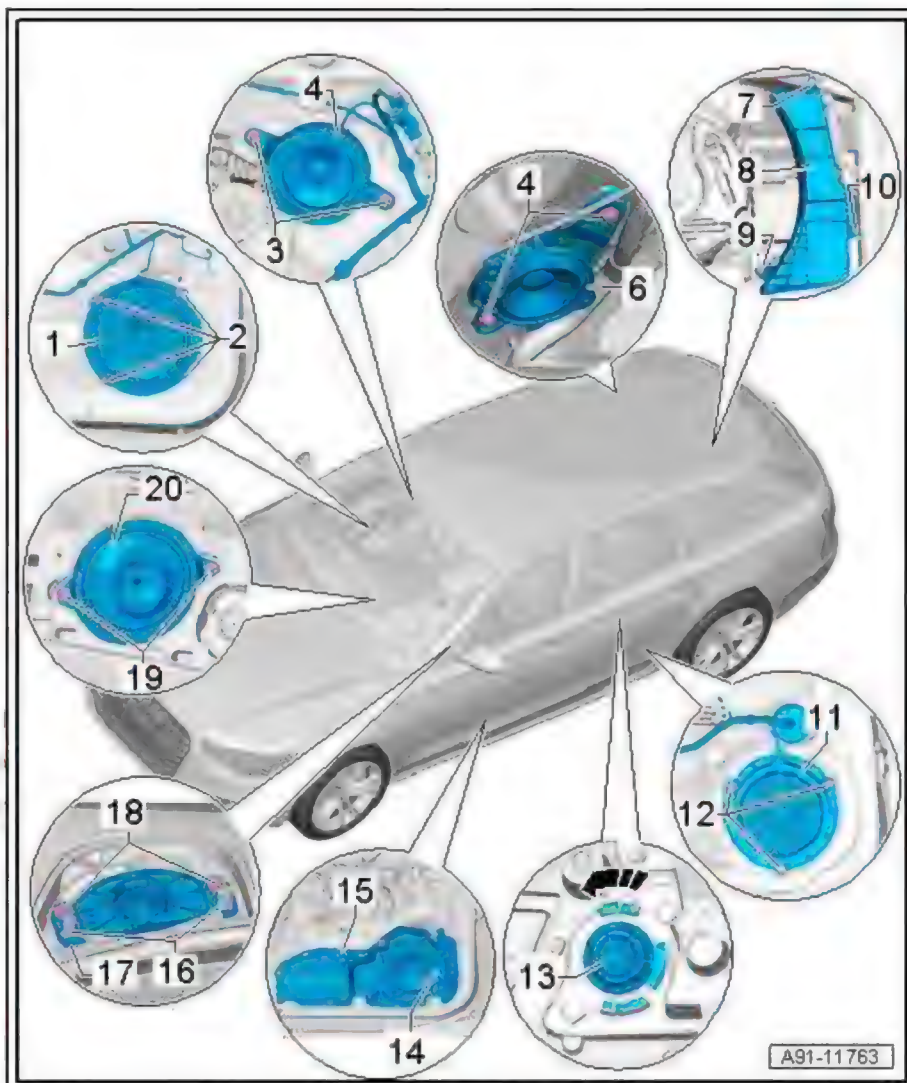
- ☐ 3 Nm

- 8 - Subwoofer - R211-

- ☐ Removing and installing ⇒ [page 85](#)

- 9 - Bolt

- ☐ 3 Nm



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10 - Bolt

- ☐ 3 Nm

11 - Rear left mid-range and bass loudspeaker - R159- / rear right mid-range and bass loudspeaker - R160-

- ☐ Removing and installing ⇒ [page 74](#)

- Rear left bass loudspeaker - R15- / rear right bass loudspeaker - R17-

- ☐ Removing and installing ⇒ [page 76](#)

12 - Bolt

- ☐ 3x
- ☐ 3 Nm

13 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16-

- ☐ Removing and installing ⇒ [page 70](#)

14 - Front left bass loudspeaker - R21- / front right bass loudspeaker - R23- , 8RY

- ☐ Removing and installing ⇒ [page 79](#)

15 - Bolt

- ☐ 10x
- ☐ 3 Nm

16 - Centring pin

17 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22-

- ☐ Removing and installing ⇒ [page 70](#)

18 - Bolt

- ☐ 2x
- ☐ 2 Nm

19 - Bolt

- ☐ 2x
- ☐ 2 Nm

20 - Centre loudspeaker - R208-

- ☐ Removing and installing ⇒ [page 88](#)



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2.2.3 Overview of fitting locations - sound system, loudspeakers (Bang & Olufsen), Saloon

1 - Bolt

- ☐ 2x
- ☐ 2 Nm

2 - Front right treble loudspeaker - R22- / front left treble loudspeaker - R20-

- ☐ With control motor for front left treble loudspeaker - V344- / control motor for front right treble loudspeaker - V345-
- ☐ Removing and installing [⇒ page 71](#)

3 - Centring pin

4 - Bolt

- ☐ 3x
- ☐ 2 Nm

5 - Left effect loudspeaker - R209- / right effect loudspeaker - R210-

- ☐ Removing and installing [⇒ page 86](#)

6 - Bolt

- ☐ 5 Nm

7 - Subwoofer - R211-

- ☐ Removing and installing (from week 08/2013 onwards) [⇒ page 84](#)

8 - Nut

- ☐ 5 Nm

9 - Bolt

- ☐ 5 Nm

10 - Subwoofer - R211-

- ☐ Removing and installing (up to week 07/2013) [⇒ page 83](#)

11 - Bolt

- ☐ 4x
- ☐ 4 Nm

12 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16-

- ☐ Removing and installing [⇒ page 70](#)

- Rear left mid-range loudspeaker - R105- / rear right mid-range loudspeaker - R106-

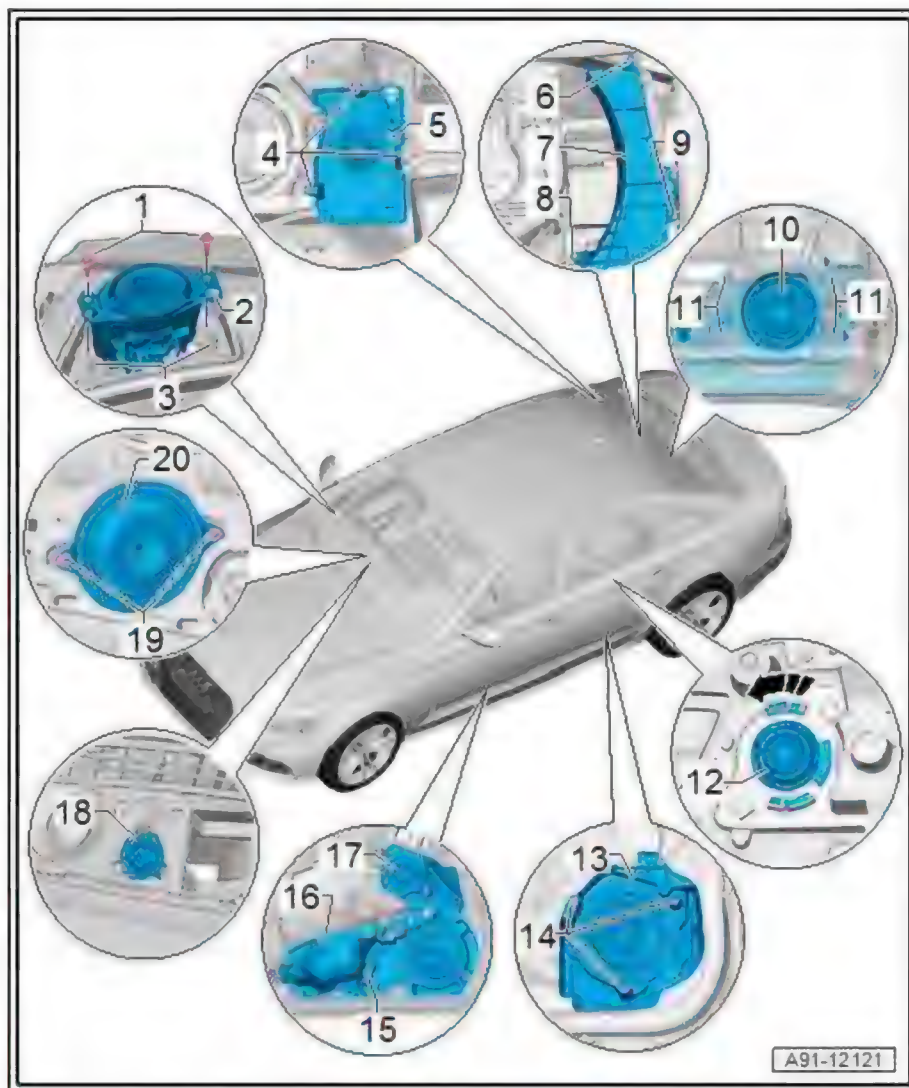
- ☐ Removing and installing [⇒ page 72](#)

13 - Rear left mid-range loudspeaker - R105- / rear right mid-range loudspeaker - R106-

- ☐ Removing and installing [⇒ page 75](#)

- Rear left bass loudspeaker - R15- / rear right bass loudspeaker - R17-

- ☐ Removing and installing [⇒ page 77](#)





14 - Bolt

- ☐ 3x
- ☐ 3 Nm

15 - Front left bass loudspeaker - R21- / front right bass loudspeaker - R23-

- ☐ Removing and installing ⇒ [page 80](#)

16 - Bolt/nut

- ☐ 10x/2x
- ☐ 3 Nm

17 - Front left mid-range loudspeaker - R103- / front right mid-range loudspeaker - R104-

- ☐ Removing and installing ⇒ [page 74](#)

18 - Centre loudspeaker 2 - R219-

- ☐ Removing and installing ⇒ [page 89](#)

19 - Bolt

- ☐ 2x
- ☐ 2 Nm

20 - Centre loudspeaker - R208-

- ☐ Removing and installing ⇒ [page 88](#)



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2.2.4 Overview of fitting locations - sound system, loudspeakers (Bang & Olufsen), Avant

1 - Bolt

- ☐ 2x
- ☐ 2 Nm

2 - Front right treble loudspeaker - R22- / front left treble loudspeaker - R20-

- ☐ With control motor for front left treble loudspeaker - V344- / control motor for front right treble loudspeaker - V345-
- ☐ Removing and installing ⇒ [page 71](#)

3 - Centring pin

4 - Bolt

- ☐ 2x
- ☐ 2 Nm

5 - Left effect loudspeaker - R209- / right effect loudspeaker - R210-

- ☐ Removing and installing ⇒ [page 87](#)

6 - Bolt

- ☐ 5 Nm

7 - Subwoofer - R211-

- ☐ Removing and installing ⇒ [page 85](#)

8 - Nut

- ☐ 5 Nm

9 - Bolt

- ☐ 5 Nm

10 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16-

- ☐ Removing and installing ⇒ [page 70](#)

- Rear left mid-range loudspeaker - R105- / rear right mid-range loudspeaker - R106-

- ☐ Removing and installing ⇒ [page 72](#)

11 - Rear left mid-range loudspeaker - R105- / rear right mid-range loudspeaker - R106-

- ☐ Removing and installing ⇒ [page 75](#)

- Rear left bass loudspeaker - R15- / rear right bass loudspeaker - R17-

- ☐ Removing and installing ⇒ [page 77](#)

12 - Bolt

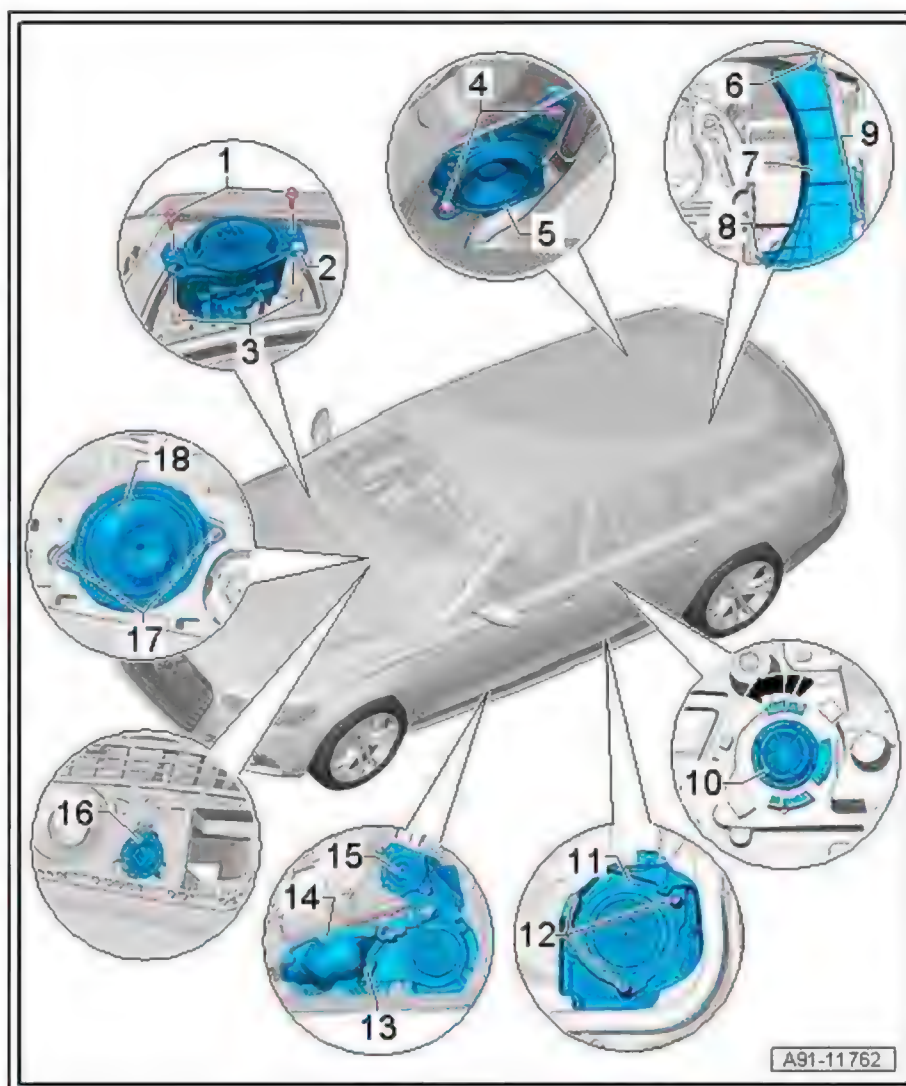
- ☐ 3x
- ☐ 3 Nm

13 - Front left bass loudspeaker - R21- / front right bass loudspeaker - R23-

- ☐ Removing and installing ⇒ [page 80](#)

14 - Bolt/nut

- ☐ 10x/2x

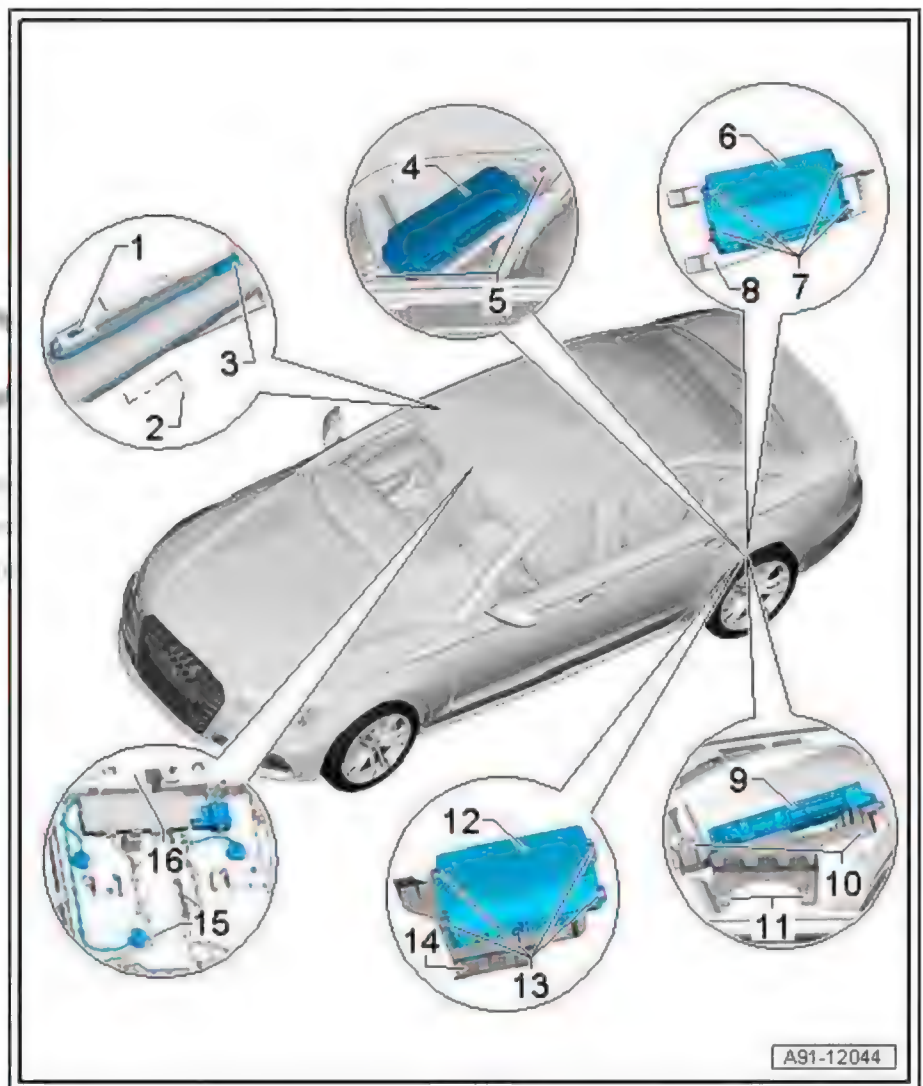




- ☐ 3 Nm
- 15 - Front left mid-range loudspeaker - R103- / front right mid-range loudspeaker - R104-
 - ☐ Removing and installing ⇒ [page 75](#)
- 16 - Centre loudspeaker 2 - R219-
 - ☐ Removing and installing ⇒ [page 89](#)
- 17 - Bolt
 - ☐ 2x
 - ☐ 2 Nm
- 18 - Centre loudspeaker - R208-
 - ☐ Removing and installing ⇒ [page 88](#)

2.2.5 Overview of fitting locations - sound system, sound amplifiers, microphones (BOSE), up to model year 2014

- 1 - ANC microphone with retaining plate
 - ☐ 4x
 - ☐ Overview ⇒ [page 57](#)
- 2 - Trim
 - ☐ 4x
- 3 - Coupling to wiring harness
 - ☐ 4x
 - ☐ Overview ⇒ [page 57](#)
- 4 - Digital sound package control unit - J525-
 - ☐ Pin assignment ⇒ [page 90](#)
 - ☐ Removing and installing (RMC) ⇒ [page 58](#)
- 5 - Nut
 - ☐ 3x
 - ☐ 4 Nm
- 6 - Digital sound package control unit - J525-
 - ☐ Removing and installing (MMI) ⇒ [page 60](#)
- 7 - Bolt
 - ☐ 4x
 - ☐ 6 Nm
- 8 - Bracket
- 9 - Digital sound package control unit - J525-
 - ☐ Removing and installing (MMI) ⇒ [page 60](#)
- 10 - Nut
 - ☐ 2x
 - ☐ 4 Nm
- 11 - Bolt
 - ☐ 2x
 - ☐ 4 Nm



12 - Digital sound package control unit - J525-

13 - Bolt

- ☐ 4x
- ☐ 6 Nm

14 - Bracket

15 - Internal microphone - R74-

- ☐ Overview ⇒ [page 170](#)

16 - Front interior light - W1-

- ☐ With microphone unit in front roof module - R164-
- ☐ Removing and installing ⇒ Electrical system; Rep. gr. 96 ; Controls; Removing and installing interior light/reading light (front)

2.2.6 Overview of fitting locations - sound system, sound amplifiers, microphones (standard/BOSE), from model year 2015 onwards

1 - ANC microphone with retaining plate

- ☐ 4x
- ☐ Overview ⇒ [page 57](#)

2 - Trim

- ☐ 4x

3 - Coupling to wiring harness

- ☐ 4x
- ☐ Overview ⇒ [page 57](#)

4 - Digital sound package control unit - J525-

- ☐ Pin assignment of 9VD ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ☐ Pin assignment of 8RY ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ☐ Removing and installing ⇒ [page 62](#)

5 - Bolt

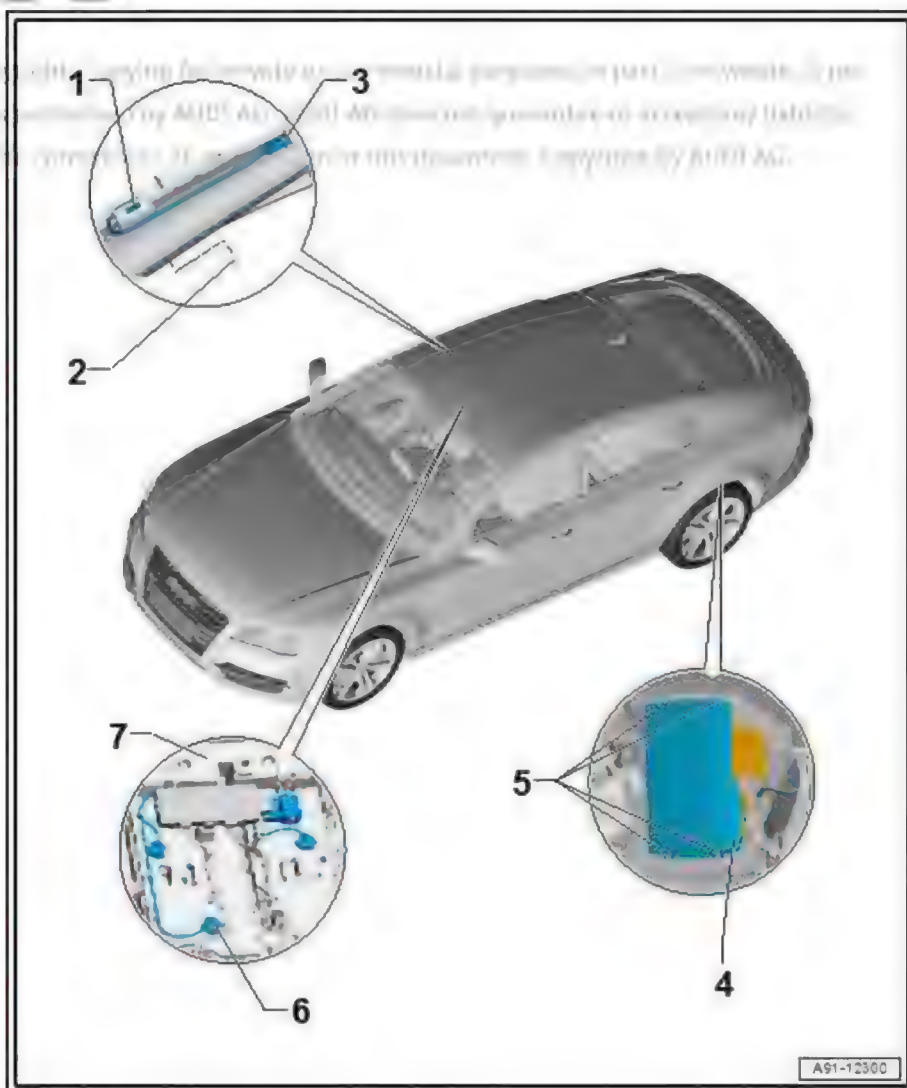
- ☐ 4x
- ☐ 4 Nm

6 - Internal microphone - R74-

- ☐ Overview ⇒ [page 170](#)

7 - Front interior light - W1-

- ☐ With microphone unit in front roof module - R164-
- ☐ Removing and installing ⇒ Electrical system; Rep. gr. 96 ; Controls; Removing and installing interior light/reading light (front)





2.2.7 Overview of fitting locations - sound system, sound amplifiers, microphones (Bang & Olufsen), up to model year 2014

1 - Trim

- ☐ 4x

2 - ANC microphone with retaining plate

- ☐ 4x
- ☐ Overview ⇒ [page 57](#)

3 - Coupling to wiring harness

- ☐ 4x
- ☐ Overview ⇒ [page 57](#)

4 - Digital sound package control unit - J525-

- ☐ Pin assignment ⇒ [page 93](#)
- ☐ Removing and installing ⇒ [page 64](#)

5 - Nut

- ☐ 5 Nm

6 - Bolt

- ☐ 3.5 Nm

7 - Bracket

8 - Digital sound package control unit - J525-

9 - Bracket

10 - Bolt

- ☐ 3.5 Nm

11 - Digital sound package control unit 2 - J787-

- ☐ Pin assignment ⇒ [page 95](#)
- ☐ Removing and installing ⇒ [page 67](#)

12 - Nut

- ☐ 4x
- ☐ 3.5 Nm

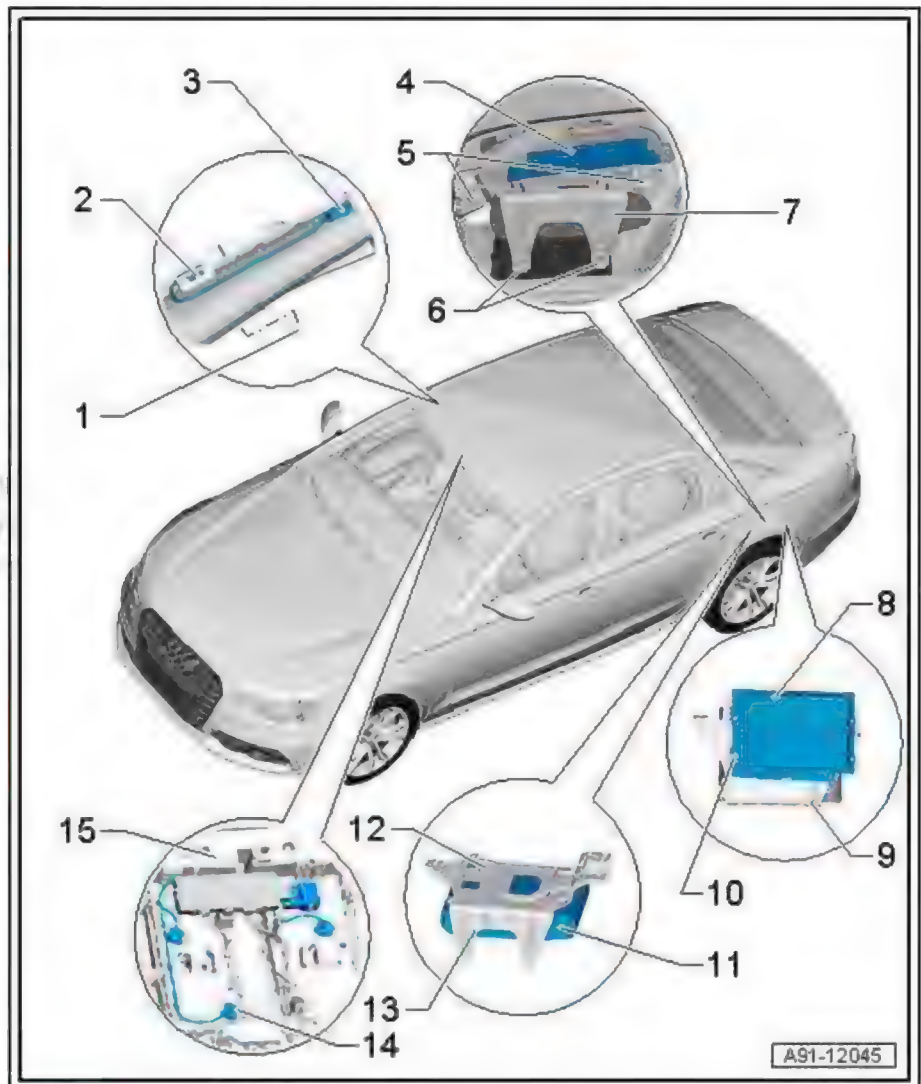
13 - Bracket

14 - Internal microphone - R74-

- ☐ Overview ⇒ [page 170](#)

15 - Front interior light - W1-

- ☐ With microphone unit in front roof module - R164-
- ☐ Removing and installing ⇒ Electrical system; Rep. gr. 96 ; Controls; Removing and installing interior light/reading light (front)



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2.2.8 Overview of fitting locations - sound system, sound amplifiers, microphones (Bang & Olufsen), from model year 2015 onwards

1 - ANC microphone with retaining plate

- 4x
- Overview ⇒ [page 57](#)

2 - Trim

- 4x

3 - Coupling to wiring harness

- 4x
- Overview ⇒ [page 57](#)

4 - Nut

- 3x
- Top: 5 Nm
- Bottom: 4 Nm

5 - Bracket

6 - Bolt

- 5 Nm

7 - Digital sound package control unit - J525-

- Pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- Removing and installing ⇒ [page 65](#)

8 - Digital sound package control unit - J525-

9 - Bracket

10 - Bolt

- 4x
- 4 Nm

11 - Internal microphone - R74-

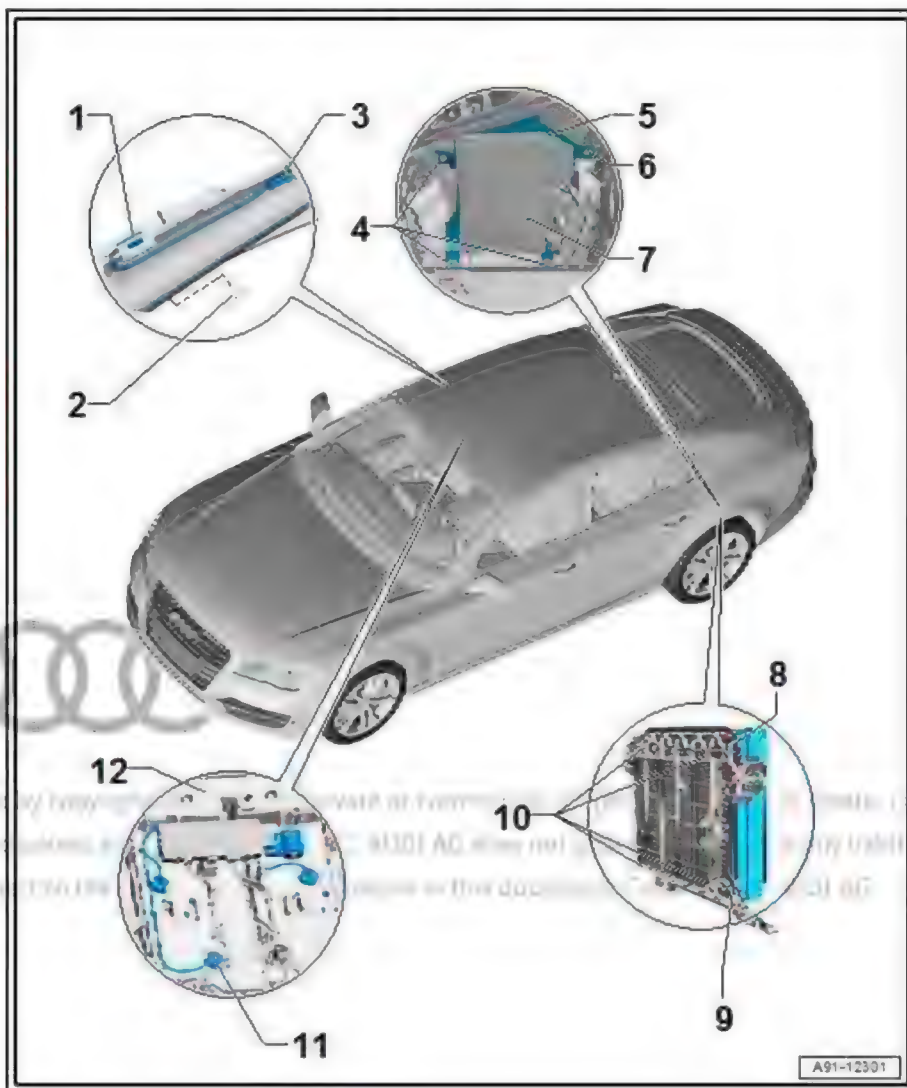
- Overview ⇒ [page 170](#)

12 - Front interior light - W1-

- With microphone unit in front roof module - R164-
- Removing and installing ⇒ Electrical system; Rep. gr. 96 ; Controls; Removing and installing interior light/reading light (front)

Not illustrated

- ◆ Bolts for brace: 5 Nm

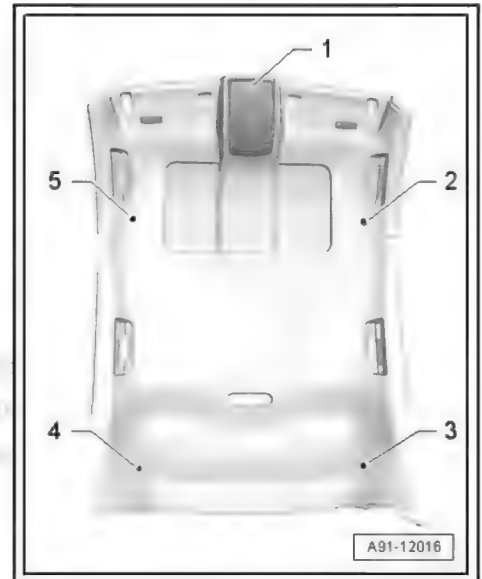


2.3 Overview of fitting locations - ANC microphones

The ANC (active noise cancellation) system consists of four additional microphones in the moulded headliner and special software in the digital sound package control unit - J525- .

ANC microphones up to model year 2014

- 1 - Front interior light - W1- with internal microphone - R74-
- 2 - Centre left microphone - R142-
- 3 - Rear left microphone - R144-
- 4 - Rear right microphone - R145-
- 5 - Centre right microphone - R143-



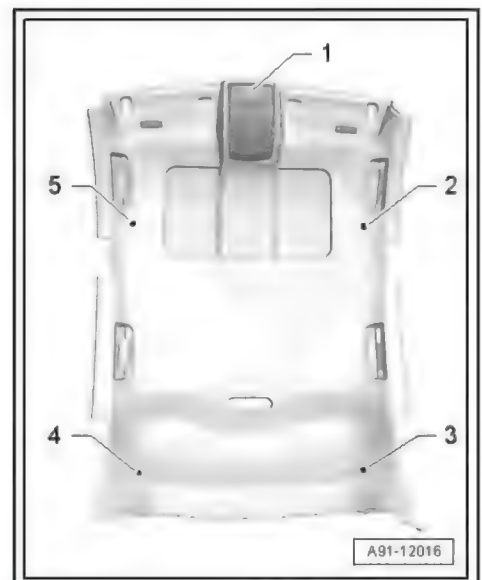
ANC microphones from model year 2015 onwards

- 1 - Front interior light - W1- with internal microphone - R74-
- 2 - Noise cancellation microphone 1 - R285-
- 3 - Noise cancellation microphone 3 - R287-
- 4 - Noise cancellation microphone 4 - R288-
- 5 - Noise cancellation microphone 2 - R286-

The ANC microphones are equipped with a trailing cable. The connector is located in the moulded headliner.

To remove, moulded headliner must be lowered at the appropriate corner.

Removing and installing ANC microphones ➔ [page 89](#) .



2.4 Removing and installing digital sound package control unit/amplifier

⇒ ["2.4.1 Removing and installing digital sound package control unit J525 - BOSE, RMC, up to model year 2014", page 58](#)

⇒ ["2.4.2 Removing and installing digital sound package control unit J525 - BOSE, MMI, up to model year 2014", page 60](#)

⇒ ["2.4.3 Removing and installing digital sound package control unit J525 - standard/BOSE, from model year 2015 onwards", page 62](#)

⇒ ["2.4.4 Removing and installing digital sound package control unit J525 - Bang & Olufsen, up to model year 2014", page 64](#)

⇒ ["2.4.5 Removing and installing digital sound package control unit J525 - Bang & Olufsen, from model year 2015 onwards", page 65](#)

⇒ ["2.4.6 Removing and installing digital sound package control unit 2 J787 - Bang & Olufsen, up to model year 2014", page 67](#)

2.4.1 Removing and installing digital sound package control unit - J525- - BOSE, RMC, up to model year 2014

Special tools and workshop equipment required

◆ Protective cap for cable connector - VAS 6223/9-



◆ Torque screwdriver - V.A.G 1624-



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Digital sound package control unit - J525- -1- is located behind luggage compartment trim (left-side).



Note

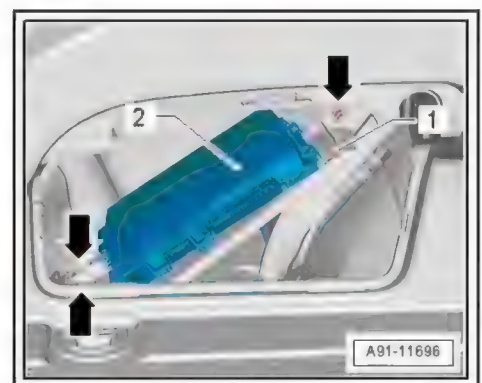
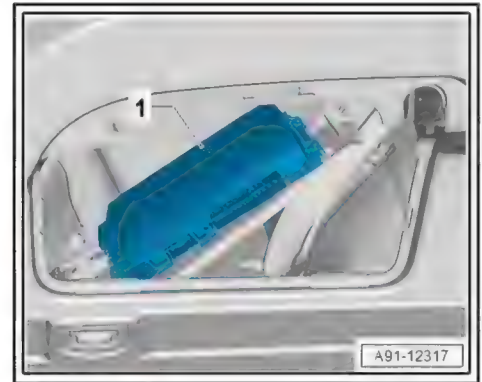
If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ➔ Vehicle diagnostic tester.

Removing

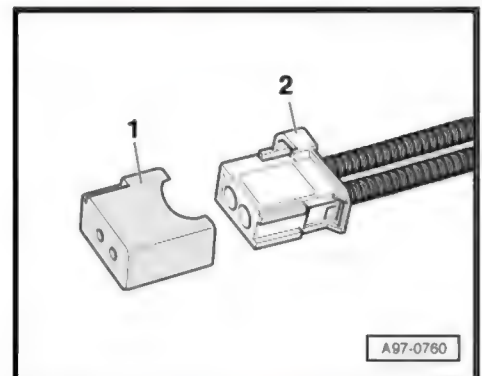
- Switch off ignition and all electrical equipment, and remove ignition key.
- Open left storage compartment in luggage compartment.

First remove bracket together with digital sound package control unit - J525- .

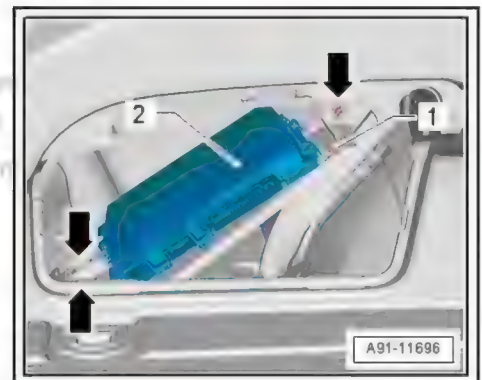
- Release and unplug connectors at digital sound package control unit - J525- -2-.



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



- Unscrew nuts -arrows- at bracket -1- and take out digital sound package control unit - J525- -2- with bracket -1-.



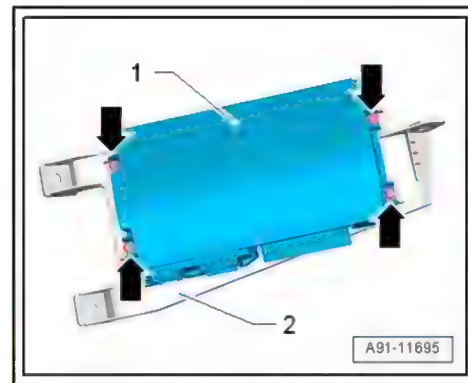
- Unscrew bolts -arrows- and detach digital sound package control unit - J525- -1- from bracket -2-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ➔ ["2.2.5 Overview of fitting locations - sound system, sound amplifiers, microphones \(BOSE\), up to model year 2014", page 53](#)



2.4.2 Removing and installing digital sound package control unit - J525- - BOSE, MMI, up to model year 2014

Special tools and workshop equipment required

- ◆ Protective cap for cable connector - VAS 6223/9-



- ◆ Torque screwdriver - V.A.G 1624-



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Digital sound package control unit - J525- -1- is located behind luggage compartment trim (left-side).



Note

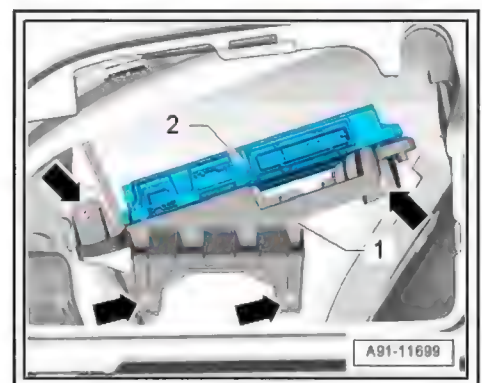
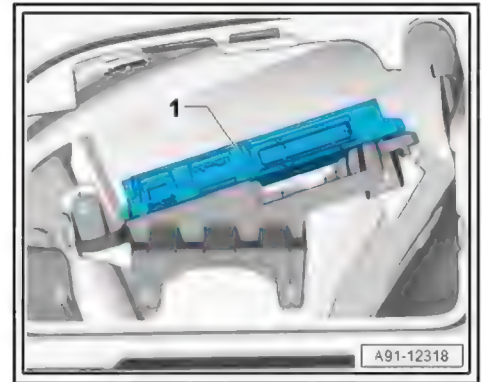
If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ➔ Vehicle diagnostic tester.

Removing

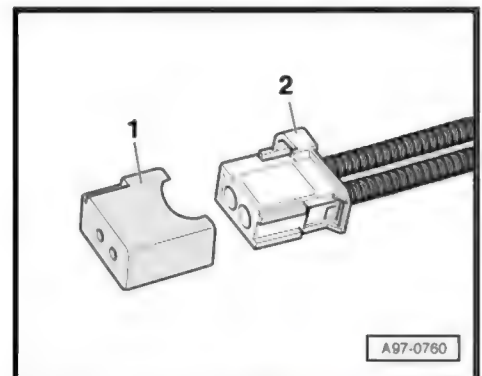
- Switch off ignition and all electrical equipment, and remove ignition key.
- Open left storage compartment in luggage compartment.

First remove bracket together with digital sound package control unit - J525- .

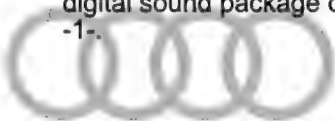
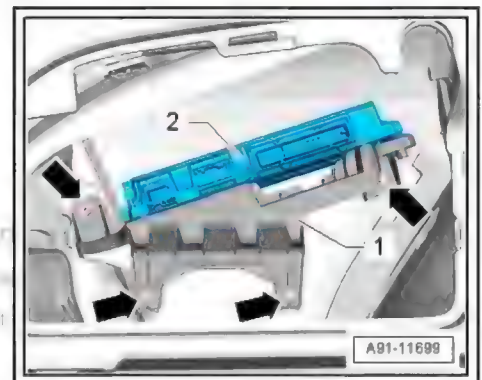
- Release and unplug connectors at digital sound package control unit - J525- -2-.



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



- Unscrew nuts and bolts -arrows- at bracket -1- and take out digital sound package control unit - J525- -2- with bracket -1-.



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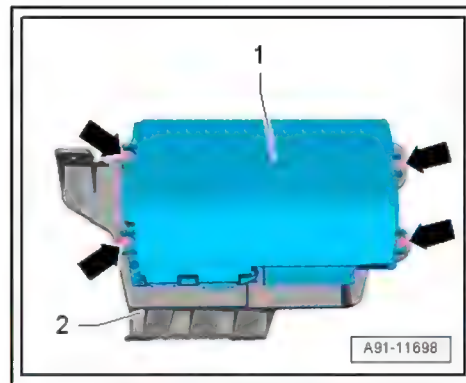
- Unscrew bolts -arrows- and detach digital sound package control unit - J525- -1- from bracket -2-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ [“2.2.5 Overview of fitting locations - sound system, sound amplifiers, microphones \(BOSE\), up to model year 2014”, page 53](#)



2.4.3 Removing and installing digital sound package control unit - J525- - standard/BOSE, from model year 2015 onwards

Special tools and workshop equipment required

- ◆ Protective cap for cable connector - VAS 6223/9-



- ◆ Torque screwdriver - V.A.G 1624-



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Digital sound package control unit - J525- -1- is located behind luggage compartment trim (left-side).



Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ⇒ Vehicle diagnostic tester.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Open left storage compartment in luggage compartment.

High-voltage vehicles from model year 2016 onwards:

- Remove luggage compartment side trim (left-side) ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing luggage compartment side trim .

All vehicles:

- Release and unplug connectors -2, 3 and 4- at digital sound package control unit - J525- -1-.



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.

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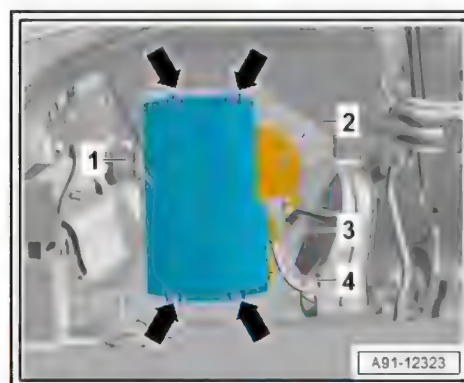
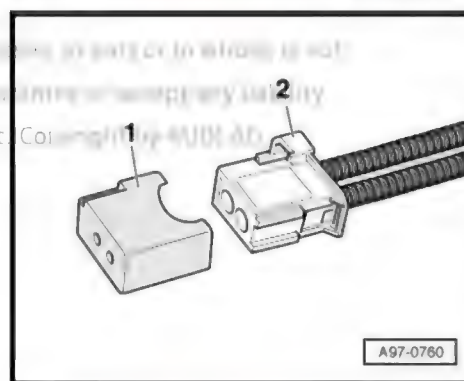
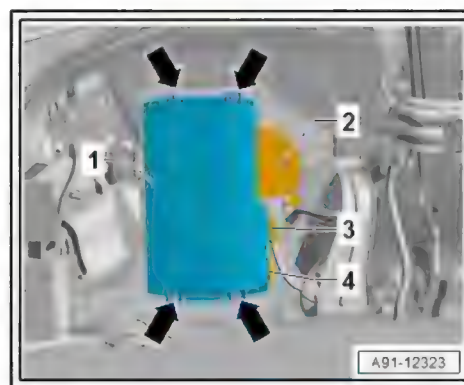
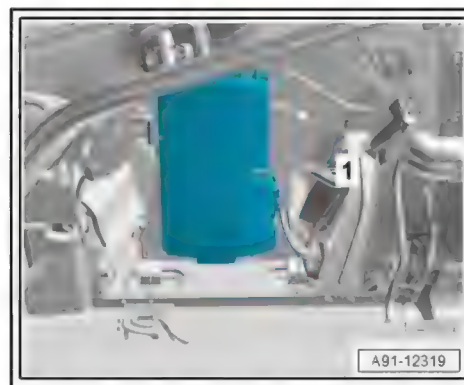
- Unscrew bolts -arrows- from bracket and remove digital sound package control unit - J525- -1-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ♦ ⇒ ["2.2.6 Overview of fitting locations - sound system, sound amplifiers, microphones \(standard/BOSE\), from model year 2015 onwards", page 54](#)



2.4.4 Removing and installing digital sound package control unit - J525- - Bang & Olufsen, up to model year 2014

Special tools and workshop equipment required

- ◆ Protective cap for cable connector - VAS 6223/9-



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- ◆ Torque screwdriver - V.A.G 1624-



Digital sound package control unit - J525- -1- is located behind luggage compartment trim (left-side).



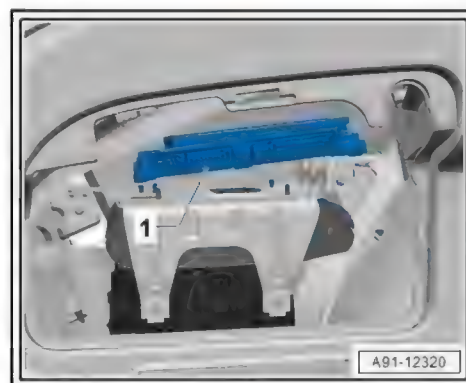
Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit → Vehicle diagnostic tester.

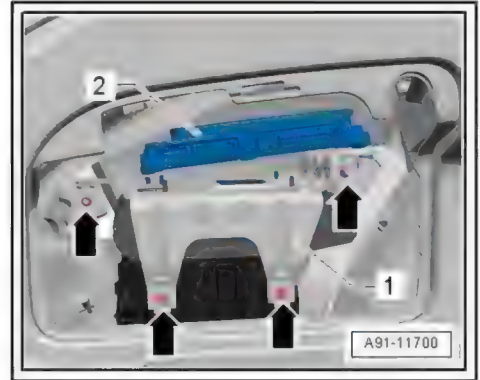
Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Open left storage compartment in luggage compartment.

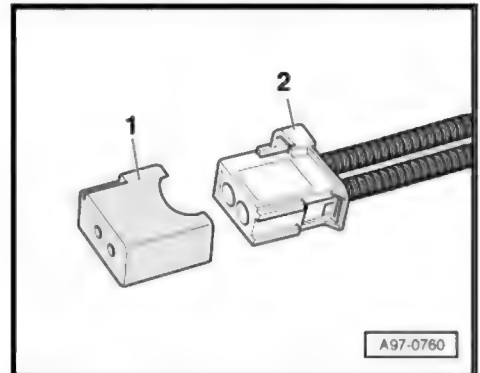
First remove bracket together with digital sound package control unit - J525- .



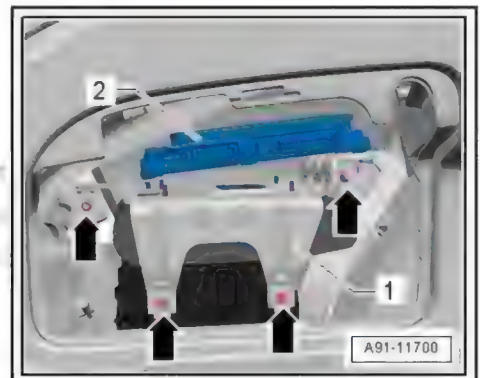
- Release and unplug connectors at digital sound package control unit - J525- -2-.



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



- Unscrew nuts and bolts -arrows- at bracket -1- and take out digital sound package control unit - J525- -2- with bracket -1-.



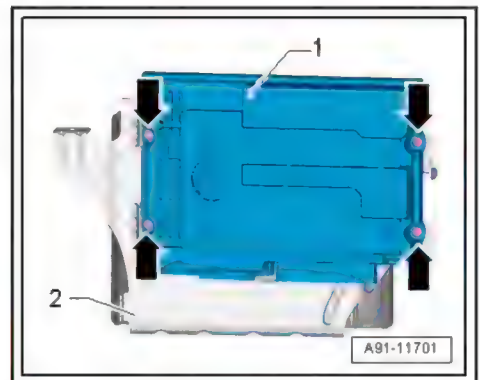
- Unscrew bolts -arrows- and detach digital sound package control unit - J525- -1- from bracket -2-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ♦ ⇒ ["2.2.7 Overview of fitting locations - sound system, sound amplifiers, microphones \(Bang & Olufsen\), up to model year 2014", page 55](#)



2.4.5 Removing and installing digital sound package control unit - J525- - Bang & Olufsen, from model year 2015 onwards

Special tools and workshop equipment required

◆ Protective cap for cable connector - VAS 6223/9-



◆ Torque screwdriver - V.A.G 1624-



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Digital sound package control unit - J525- -1- is located behind luggage compartment trim (left-side).



Note

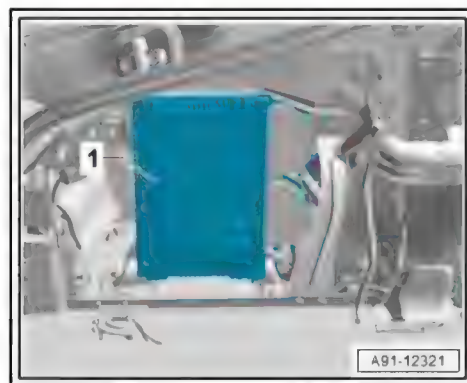
If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ⇒ Vehicle diagnostic tester.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove luggage compartment side trim (left-side) ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing luggage compartment side trim .

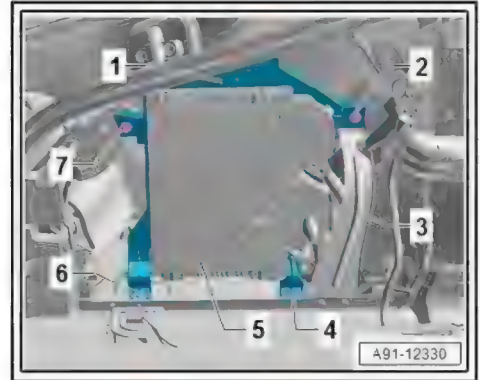
First remove bracket together with digital sound package control unit - J525- .

- If fitted, remove lever for towing bracket ⇒ General body repairs, exterior; Rep. gr. 66 ; Towing bracket; Exploded view - towing bracket .

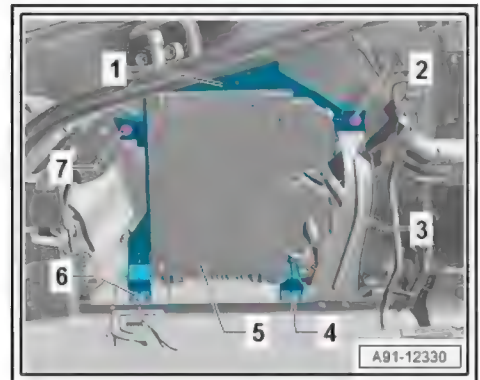




- Remove nuts -4, 6 and 7- and bolt -2- from bracket -1-.
- Remove brace -3-.
- Pivot digital sound package control unit - J525- -5- together with bracket -1- into luggage compartment.

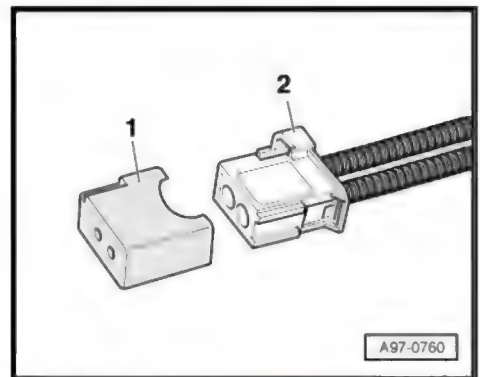


- Release and unplug connectors at digital sound package control unit - J525- -5-.
- If fitted, release and unplug connectors on TV tuner - R78- .



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.
- Remove digital sound package control unit - J525- -5- with bracket -1-.

The TV tuner - R78- does not have to be removed.



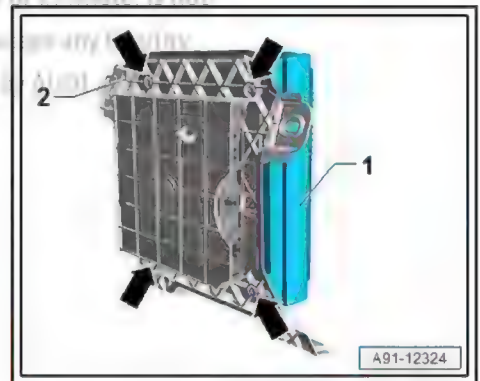
- Unscrew bolts -arrows- and detach digital sound package control unit - J525- -1- from bracket -2-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["2.2.8 Overview of fitting locations - sound system, sound amplifiers, microphones \(Bang & Olufsen\), from model year 2015 onwards", page 56](#)



2.4.6 Removing and installing digital sound package control unit 2 - J787- - Bang & Olufsen, up to model year 2014

Special tools and workshop equipment required

◆ Protective cap for cable connector - VAS 6223/9-



◆ Torque screwdriver - V.A.G 1624-



The digital sound package control unit 2 - J787- -1- is located behind the luggage compartment trim (left-side) beneath the digital sound package control unit - J525- .



Note

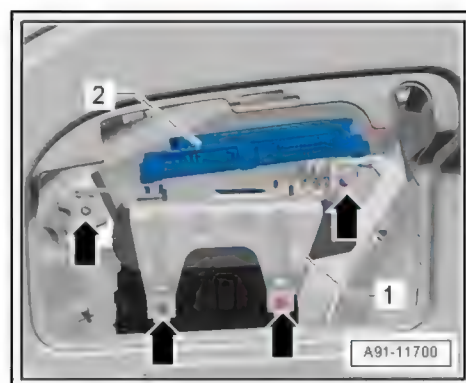
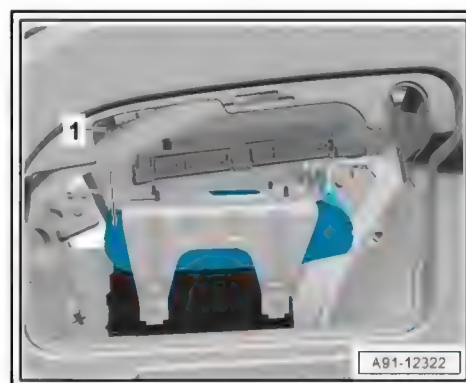
If renewing the control unit, select the "Replace control unit" function for the appropriate control unit → Vehicle diagnostic tester.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Open left storage compartment in luggage compartment.

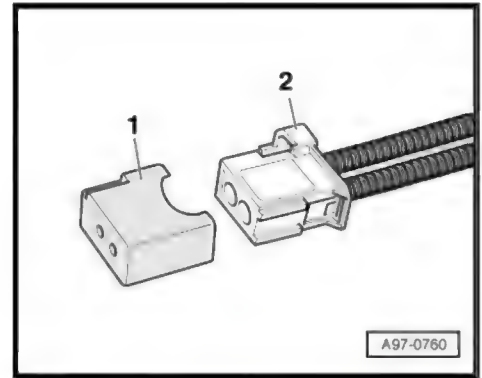
First remove bracket together with digital sound package control unit - J525- .

- Release and unplug connectors at digital sound package control unit - J525- -2-.



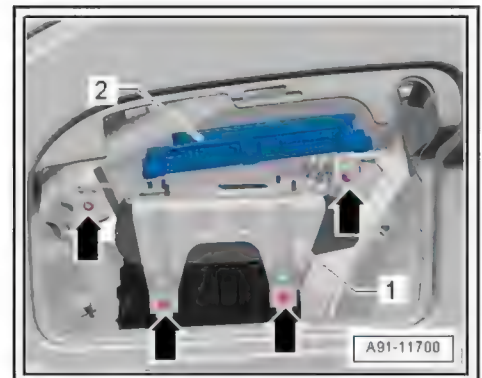


- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.

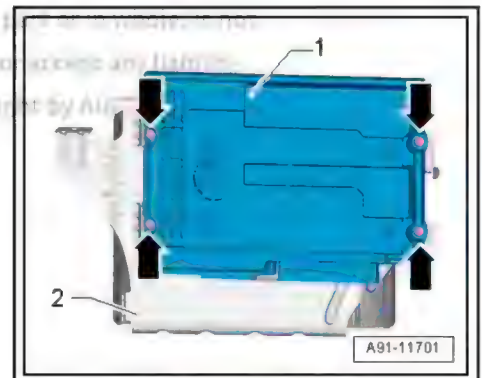


- Unscrew nuts and bolts -arrows- at bracket -1- and take out digital sound package control unit - J525- -2- with bracket -1-.

Securing nuts for digital sound package control unit 2 - J525- are covered by digital sound package control unit - J787- .



- Unscrew bolts -arrows- and detach digital sound package control unit - J525- -1- from bracket -2-.



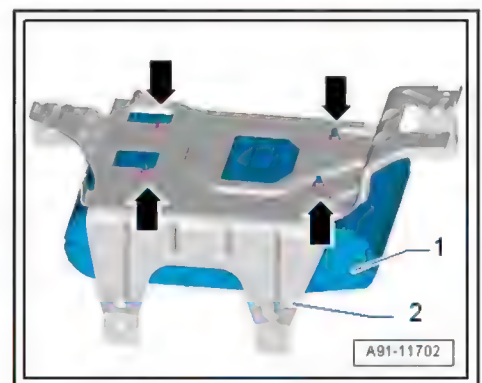
- Unscrew nuts -arrows- at bracket -2- and detach digital sound package control unit 2 - J787- -1- from bracket -2-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ♦ ⇒ ["2.2.7 Overview of fitting locations - sound system, sound amplifiers, microphones \(Bang & Olufsen\), up to model year 2014", page 55](#)



2.5 Removing and installing rear treble loudspeakers -R14- / -R16-

The rear left treble loudspeaker - R14- and the rear right treble loudspeaker - R16- -1- are located in the rear doors (top).

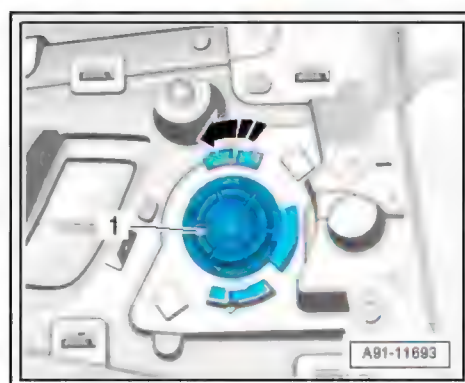
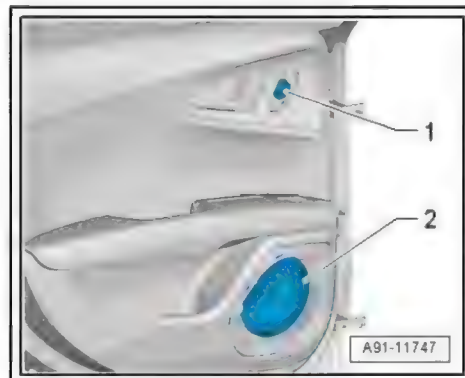
The removal and installation procedure is similar for all components.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear door trim ⇒ General body repairs, interior; Rep. gr. 70 ; Rear door trim; Removing and installing door trim (rear) .
- Release and unplug connector at rear left treble loudspeaker - R14- -1-.
- Turn rear left treble loudspeaker - R14- -1- in direction of -arrow- until it can be detached from door trim.

Installing

- Install in reverse sequence of removal.



2.6 Removing and installing front treble loudspeakers -R20- / -R22-

⇒ "2.6.1 Removing and installing front treble loudspeakers R20 / R22 ", page 70

⇒ "2.6.2 Removing and installing front treble loudspeakers R20 / V344 / R22 / V345 - Bang & Olufsen", page 71

2.6.1 Removing and installing front treble loudspeakers -R20- / -R22-

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



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The front left treble loudspeaker - R20- -1- and the front right treble loudspeaker - R22- -4- are located in the dash panel (front).

The removal and installation procedure is similar for all components.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove loudspeaker trim (side) ➔ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing loudspeaker trim.
- Remove bolts -1- at front left treble loudspeaker - R20- -2- and lift front left treble loudspeaker - R20- -2- off centring pins -3-.
- Release and unplug connector at front left treble loudspeaker - R20- -2-.

Installing

- Installation is carried out in reverse sequence; note the following:

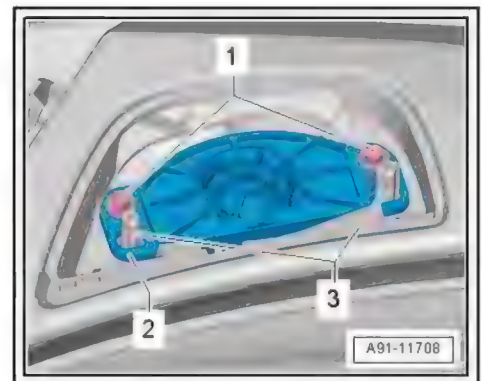
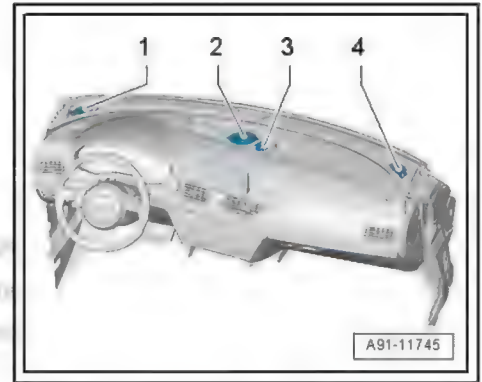
Tightening torques

- ◆ ➔ ["2.2.1 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Saloon", page 46](#)
- ◆ ➔ ["2.2.2 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Avant", page 48](#)

2.6.2 Removing and installing front treble loudspeakers -R20- / -V344- / -R22- / -V345- - Bang & Olufsen

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



The front left treble loudspeaker - R20- -1- and the front right treble loudspeaker - R22- -4- are located in the dash panel (front).

The removal and installation procedure is similar for all components.

The control motor for front left treble loudspeaker - R20- / control motor for front right treble loudspeaker - R22- is integrated in the front left treble loudspeaker - V344- -1-/ front right treble loudspeaker - V345- . The control motors cannot be renewed separately.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove loudspeaker trim (side) ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing loudspeaker trim .
- Remove bolts -1- at front left treble loudspeaker - R20- -2- and lift front left treble loudspeaker - R20- -2- off centring pins -3-.
- Release and unplug connectors at front left treble loudspeaker - R20- -2-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ♦ ⇒ [“2.2.3 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Saloon”, page 50](#)
- ♦ ⇒ [“2.2.4 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Avant”, page 52](#)

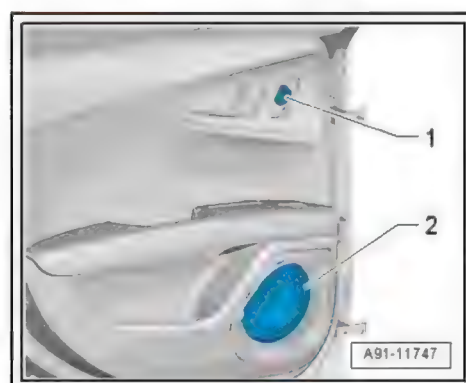
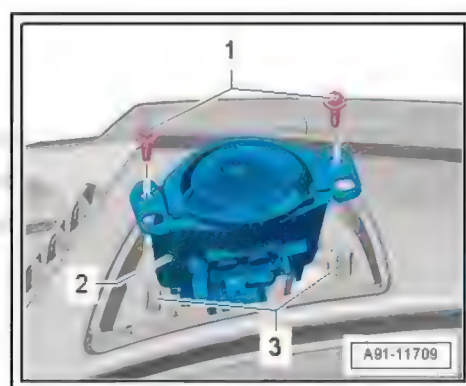
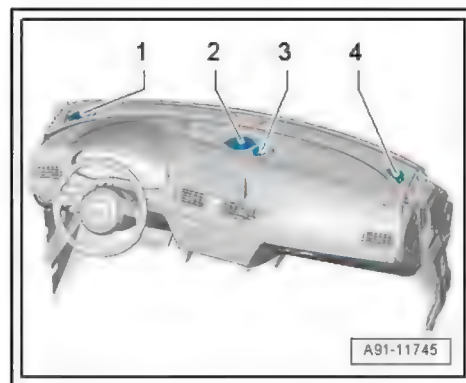
2.7 Removing and installing rear mid-range loudspeakers

The rear left mid-range loudspeaker - R105- and the rear right mid-range loudspeaker - R106- -1- are located in the rear doors (top).

The removal and installation procedure is similar for all components.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear door trim ⇒ General body repairs, interior; Rep. gr. 70 ; Rear door trim; Removing and installing door trim (rear) .

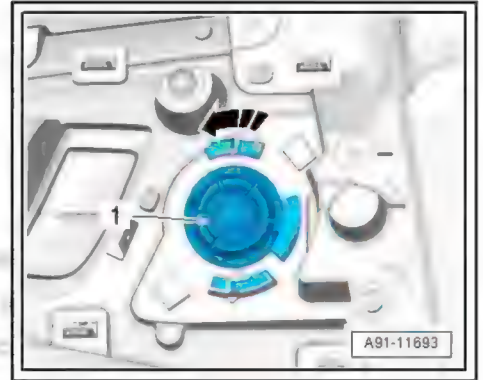




- Release and unplug connector at rear left mid-range loudspeaker - R105- -1-.
- Turn rear left mid-range loudspeaker - R105- -1- in direction of -arrow- until it can be detached from door trim.

Installing

- Install in reverse sequence of removal.



2.8 Removing and installing front mid-range loudspeakers

⇒ ["2.8.1 Removing and installing front mid-range loudspeakers R103 / R104", page 73](#)

⇒ ["2.8.2 Removing and installing front mid-range loudspeakers R103 / R104 - Bang & Olufsen", page 74](#)

2.8.1 Removing and installing front mid-range loudspeakers -R103- / -R104-

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-

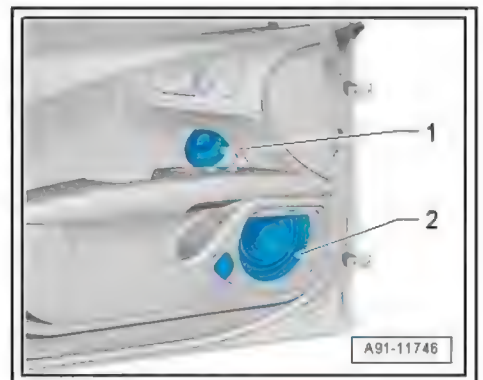


The front left mid-range loudspeaker - R103- and the front right mid-range loudspeaker - R104- -1- are located in the front doors (centre).

The removal and installation procedure is similar for all components.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove door trim (front) ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Removing and installing door trim (front) .



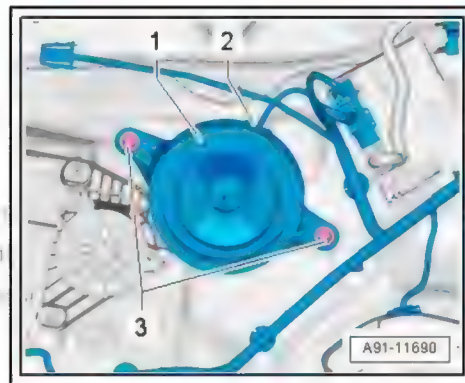
- Release and unplug electrical connector -2- at front left mid-range loudspeaker - R103- -1-.
- Remove bolts -3-.
- Detach front left mid-range loudspeaker - R103- -1-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["2.2.1 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Saloon", page 46](#)
- ◆ ⇒ ["2.2.2 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Avant", page 48](#)



2.8.2 Removing and installing front mid-range loudspeakers -R103- / -R104- - Bang & Olufsen

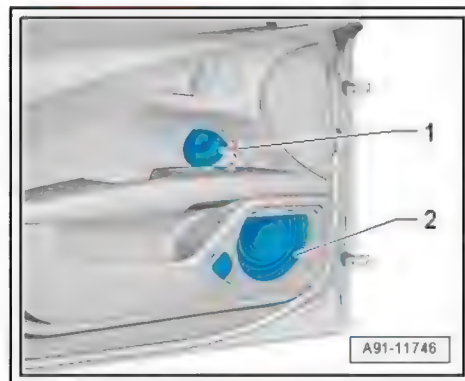
The front left mid-range loudspeaker - R103- and the front right mid-range loudspeaker - R104- -1- are located in the front doors (centre).

The removal and installation procedure is similar for all components.

Both loudspeakers are connected to the front left bass loudspeaker - R21- / front right bass loudspeaker - R23- and cannot be renewed individually.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove front bass loudspeakers (Bang & Olufsen)
⇒ [page 80](#) .



2.9 Removing and installing rear mid-range and bass loudspeakers

⇒ ["2.9.1 Removing and installing rear mid-range and bass loudspeakers R159 / R160", page 74](#)

⇒ ["2.9.2 Removing and installing rear mid-range and bass loudspeakers R159 / R160 - Bang & Olufsen", page 75](#)

2.9.1 Removing and installing rear mid-range and bass loudspeakers -R159- / -R160-

Special tools and workshop equipment required



◆ Torque screwdriver - V.A.G 1624-

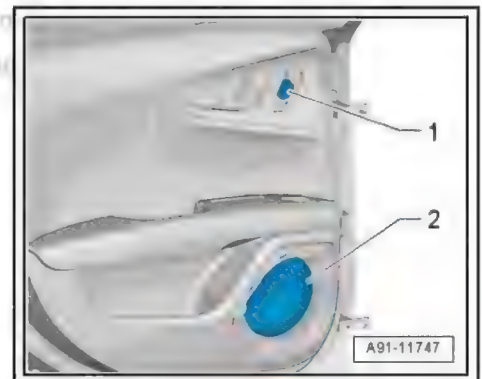


The rear left mid-range and bass loudspeaker -R159- and the rear right mid-range and bass loudspeaker -R160- -2- are located in the rear doors (bottom).

The removal and installation procedure is similar for all components.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear door trim ⇒ General body repairs, interior; Rep. gr. 70 ; Rear door trim; Removing and installing door trim (rear) .
- Release and unplug electrical connector -2- at rear left mid-range and bass loudspeaker -R159- -1-.
- Remove bolts -3-.
- Remove rear left mid-range and bass loudspeaker -R159- -1-.

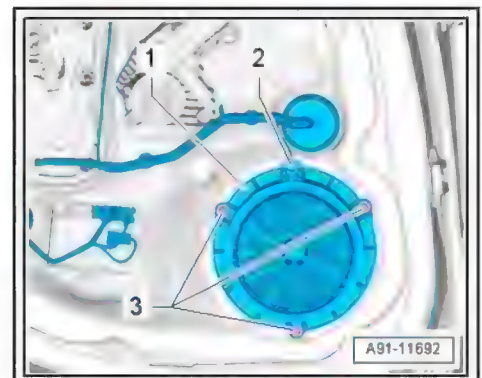


Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["2.2.1 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Saloon", page 46](#)
- ◆ ⇒ ["2.2.2 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Avant", page 48](#)



2.9.2 Removing and installing rear mid-range and bass loudspeakers -R159- / -R160- - Bang & Olufsen

Special tools and workshop equipment required

◆ Torque screwdriver - V.A.G 1624-

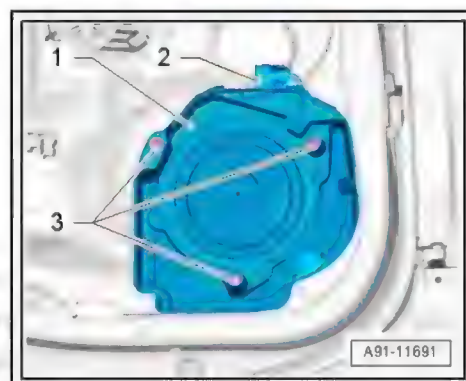
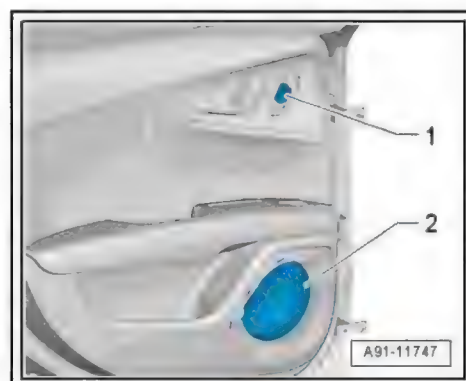


The rear left mid-range and bass loudspeaker - R159- and the rear right mid-range and bass loudspeaker - R160- -2- are located in the rear doors (bottom).

The removal and installation procedure is similar for all components.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear door trim ⇒ General body repairs, interior; Rep. gr. 70 ; Rear door trim; Removing and installing door trim (rear) .
- Release and unplug electrical connector -2- at rear left mid-range and bass loudspeaker - R159- -1-.
- Remove bolts -3-.
- Remove rear left mid-range and bass loudspeaker - R159- -1-.



Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["2.2.3 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Saloon", page 50](#)
- ◆ ⇒ ["2.2.4 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Avant", page 52](#)

2.10 Removing and installing rear bass loudspeakers -R15- / -R17-

⇒ ["2.10.1 Removing and installing rear bass loudspeakers R15 / R17", page 76](#)

⇒ ["2.10.2 Removing and installing rear bass loudspeakers R15 / R17 - Bang & Olufsen", page 77](#)

2.10.1 Removing and installing rear bass loudspeakers -R15- / -R17-

Special tools and workshop equipment required



◆ Torque screwdriver - V.A.G 1624-

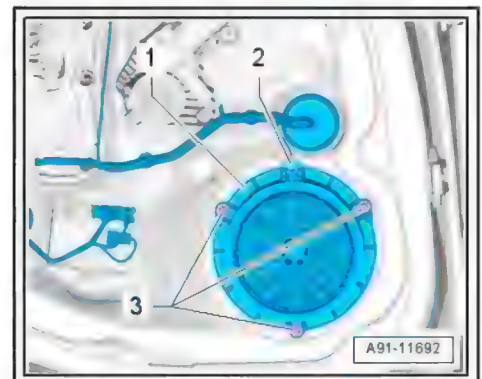
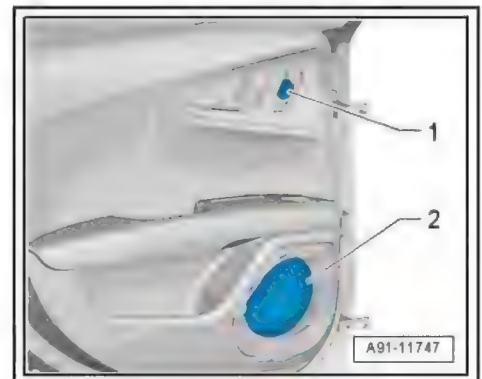


The rear left bass loudspeaker - R15- and the rear right bass loudspeaker - R17- -2- are located in the rear doors (bottom).

The removal and installation procedure is similar for all components.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear door trim ⇒ General body repairs, interior; Rep. gr. 70 ; Rear door trim; Removing and installing door trim (rear) .
- Release and unplug electrical connector -2- at rear left bass loudspeaker - R15- -1-.
- Remove bolts -3-.
- Detach rear left bass loudspeaker - R15- -1-.



Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["2.2.1 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Saloon", page 46](#)
- ◆ ⇒ ["2.2.2 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Avant", page 48](#)

2.10.2 Removing and installing rear bass loudspeakers -R15- / -R17- - Bang & Olufsen

Special tools and workshop equipment required

◆ Torque screwdriver - V.A.G 1624-



Removing

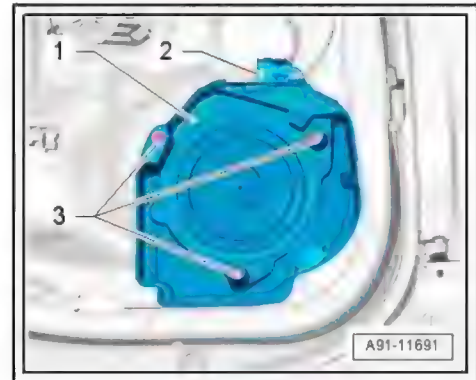
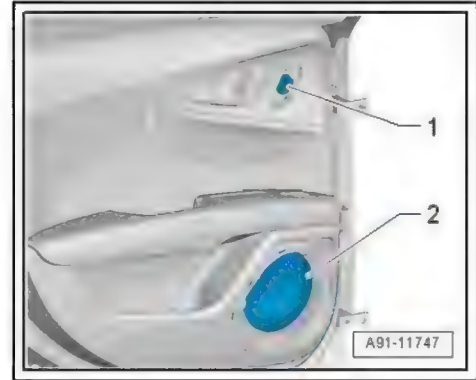
- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear door trim ⇒ General body repairs, interior; Rep. gr. 70 ; Rear door trim; Removing and installing door trim (rear) .
- Release and unplug electrical connector -2- at rear left bass loudspeaker - R15- -1-.
- Remove bolts -3-.
- Detach rear left bass loudspeaker - R15- -1-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ “2.2.3 Overview of fitting locations - sound system, loudspeakers (Bang & Olufsen), Saloon”, page 50
- ◆ ⇒ “2.2.4 Overview of fitting locations - sound system, loudspeakers (Bang & Olufsen), Avant”, page 52



2.11 Removing and installing front bass loudspeakers -R21- / -R23-

⇒ “2.11.1 Removing and installing front bass loudspeakers R21 / R23 - standard”, page 78

⇒ “2.11.2 Removing and installing front bass loudspeakers R21 / R23 - BOSE”, page 79

⇒ "2.11.3 Removing and installing front bass loudspeakers R21 / R103 / R23 / R104 - Bang & Olufsen", page 80

2.11.1 Removing and installing front bass loudspeakers -R21- / -R23- - standard

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



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The front left bass loudspeaker - R21- and the front right bass loudspeaker - R23- -2- are located in the front doors (bottom).

The removal and installation procedure is similar for all components.

Removing

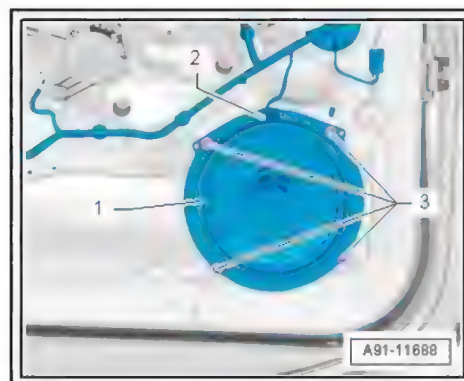
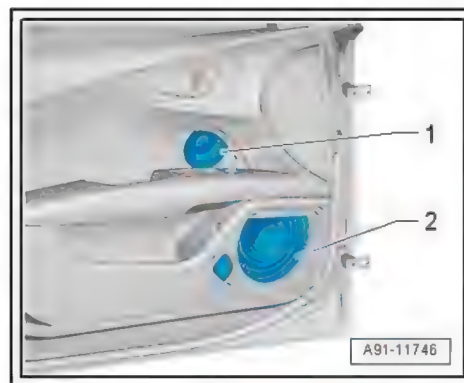
- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove door trim (front) ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Removing and installing door trim (front) .
- Release and unplug connector -2- at front left bass loudspeaker - R21- -1-.
- Remove bolts -3-.
- Detach front left bass loudspeaker - R21- -1-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["2.2.1 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Saloon", page 46](#)
- ◆ ⇒ ["2.2.2 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Avant", page 48](#)



2.11.2 Removing and installing front bass loudspeakers -R21- / -R23- - BOSE

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-

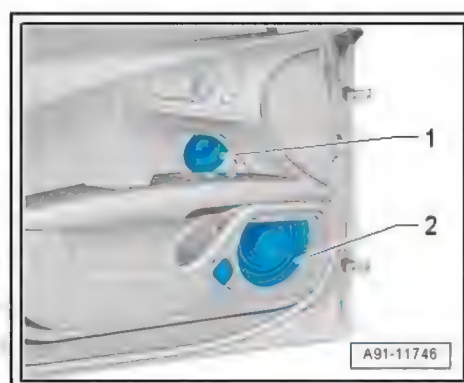


The front left bass loudspeaker - R21- and the front right bass loudspeaker - R23- -2- are located in the front doors (bottom).

The removal and installation procedure is similar for all components.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove door trim (front) ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Removing and installing door trim (front) .



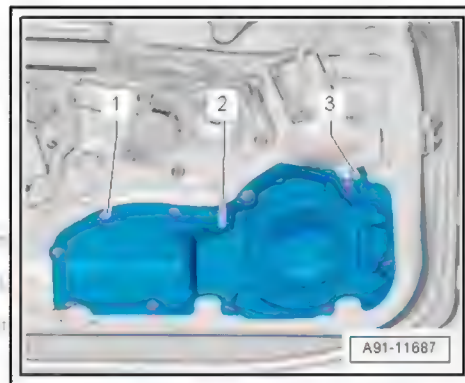
- Release and unplug connector -3- at front left bass loudspeaker - R21- -2-.
- Remove bolts -1- (10x).
- Detach front left bass loudspeaker - R21- -2-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["2.2.1 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Saloon", page 46](#)
- ◆ ⇒ ["2.2.2 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Avant", page 48](#)



2.11.3 Removing and installing front bass loudspeakers -R21- / -R103- / -R23- / -R104- - Bang & Olufsen

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



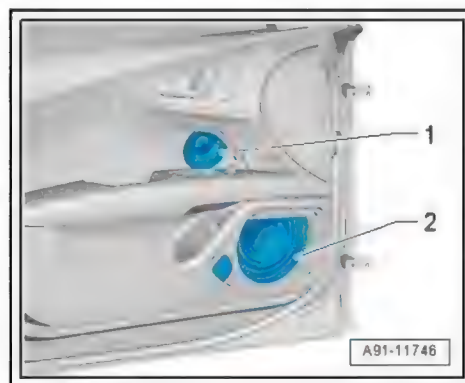
The front left bass loudspeaker - R21- , front right bass loudspeaker - R23- , front left mid-range loudspeaker - R103- and front right mid-range loudspeaker - R104- -2- are located in the front doors (bottom).

The front left bass loudspeaker - R21- , front left mid-range loudspeaker - R103- and front right bass loudspeaker - R23- , front right mid-range loudspeaker - R104- are fitted in one housing and cannot be renewed individually.

The following removal and installation instructions refer to the front left bass loudspeaker - R21- .

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove door trim (front) ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Removing and installing door trim (front) .





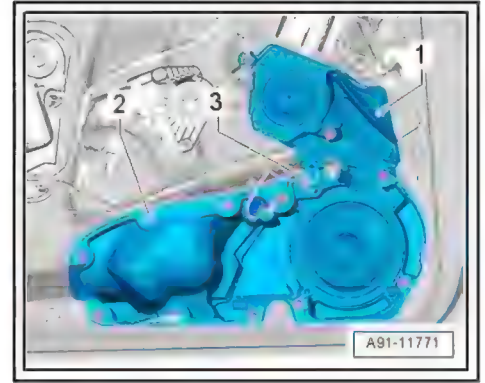
- Release and unplug connector -3- at front left bass loudspeaker - R21- -1-.
- Remove bolts and nuts -2- (12x).
- Detach front left bass loudspeaker - R21- -1-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ [“2.2.3 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Saloon”, page 50](#)
- ◆ ⇒ [“2.2.4 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Avant”, page 52](#)



2.12 Removing and installing subwoofer - R211-

⇒ [“2.12.1 Removing and installing subwoofer R211 - standard”, page 81](#)

⇒ [“2.12.2 Removing and installing subwoofer R211 - BOSE”, page 82](#)

⇒ [“2.12.3 Removing and installing subwoofer R211 - Bang & Olufsen, Saloon up to week 07/2013”, page 83](#)

⇒ [“2.12.4 Removing and installing subwoofer R211 - Bang & Olufsen, Saloon from week 08/2013 onwards”, page 84](#)

⇒ [“2.12.5 Removing and installing subwoofer R211 \(Avant\)”, page 85](#)

2.12.1 Removing and installing subwoofer - R211- - standard

Special tools and workshop equipment required

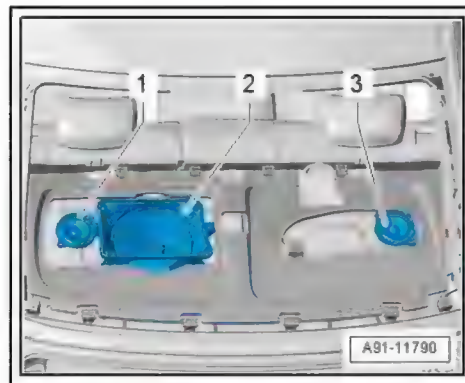
- ◆ Torque screwdriver - V.A.G 1624-



The subwoofer - R211- -2- is located in the rear shelf (centre).

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear shelf ➔ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim; Removing and installing rear shelf .



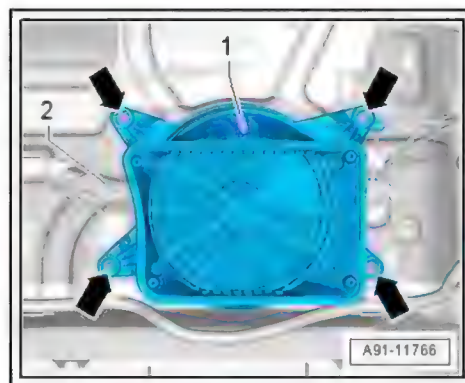
- Release and unplug connector at subwoofer - R211- -1-.
- Remove bolts -arrows- on subwoofer - R211- -1-.
- Lift subwoofer - R211- -1- off rear shelf -2-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ♦ ➔ ["2.2.1 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Saloon", page 46](#)



2.12.2 Removing and installing subwoofer - R211- - BOSE

Special tools and workshop equipment required

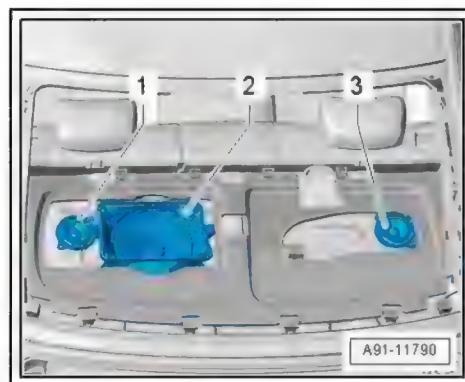
- ♦ Torque screwdriver - V.A.G 1624-



The subwoofer - R211- -2- is located in the rear shelf (centre).

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear shelf ➔ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim; Removing and installing rear shelf .



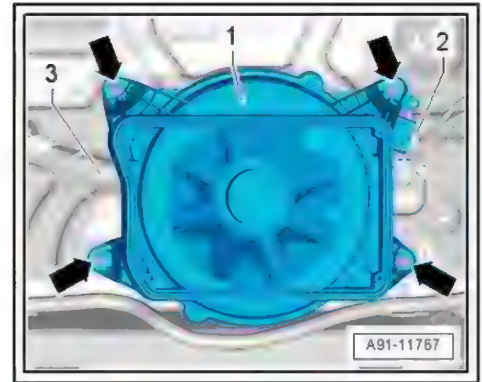
- Release and unplug connector -2- at subwoofer - R211- -1-.
- Remove bolts -arrows- on subwoofer - R211- -1-.
- Lift subwoofer - R211- -1- off rear shelf -3-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["2.2.1 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Saloon", page 46](#)



2.12.3 Removing and installing subwoofer - R211- - Bang & Olufsen, Saloon up to week 07/2013

Special tools and workshop equipment required

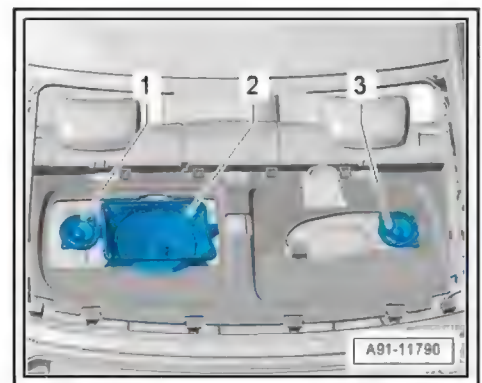
- ◆ Torque screwdriver - V.A.G 1624-



The subwoofer - R211- -2- is located in the rear shelf (centre). The subwoofer - R211- is secured to rear shelf (top) and can be removed downwards into the luggage compartment.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear shelf ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim; Removing and installing rear shelf .
- Open luggage compartment.
- Remove left effect loudspeaker - R209- ⇒ [page 86](#) .



Wird hiermit ausdrücklich bestätigt, dass die in diesem Dokument enthaltenen Informationen ausschließlich für den Gebrauch im Zusammenhang mit der Reparatur von Audi Fahrzeugen bestimmt sind und keine Gewährleistung für die Richtigkeit der Angaben übernehmen. Die Audi AG übernimmt keine Haftung für Schäden, die aus dem Gebrauch dieser Informationen resultieren.

- Release and unplug connector -2- at subwoofer - R211- -1-.

A ring with spring elements is secured to the loudspeaker housing; it must be removed first.

- Remove ring from subwoofer - R211- -1-.
- Remove bolts -arrows- at subwoofer - R211- -1- and remove subwoofer - R211- -1- from rear shelf -3- downwards into luggage compartment.

Installing

- Installation is carried out in reverse sequence; note the following:
- First push subwoofer - R211- upwards from luggage compartment and engage it.

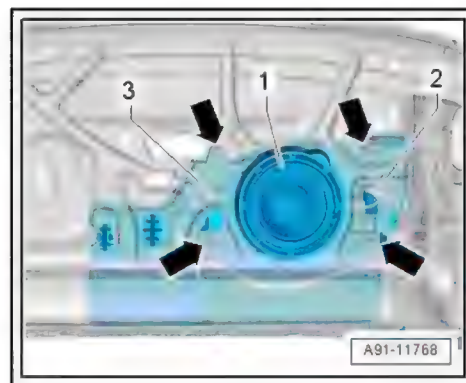
Tightening torques

- ♦ ⇒ ["2.2.3 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Saloon", page 50](#)

2.12.4 Removing and installing subwoofer - R211- - Bang & Olufsen, Saloon from week 08/2013 onwards

Special tools and workshop equipment required

- ♦ Torque screwdriver - V.A.G 1624-



The subwoofer - R211- -2- is located in the luggage compartment recess (right-side).

Removing

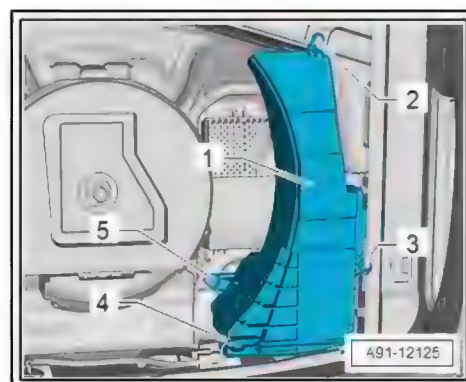
- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove luggage compartment floor covering.
- Remove bolts -2 and 3- and nut -5- from subwoofer - R211- -1-.
- Release and unplug connector -4-.
- Lift out subwoofer - R211- -1-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ♦ ⇒ ["2.2.3 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Saloon", page 50](#)





2.12.5 Removing and installing subwoofer - R211- (Avant)

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



The subwoofer - R211- -2- is located in the luggage compartment recess (right-side).

Removing

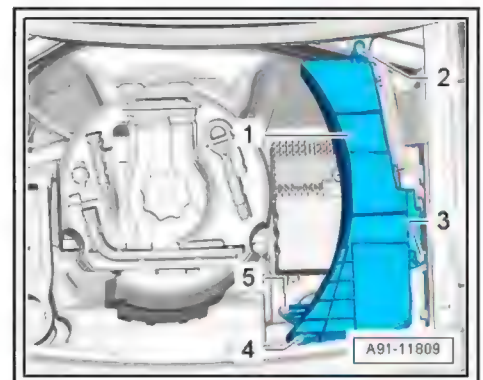
- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove luggage compartment floor covering.
- Remove bolts -2 and 3- and nut -5- from subwoofer - R211- -1-.
- Release and unplug connector -4-.
- Lift out subwoofer - R211- -1-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["2.2.2 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Avant", page 48](#)
- ◆ ⇒ ["2.2.4 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Avant", page 52](#)



2.13 Removing and installing effect loudspeakers

⇒ ["2.13.1 Removing and installing effect loudspeakers R209 / R210 - BOSE", page 85](#)

⇒ ["2.13.2 Removing and installing effect loudspeakers R209 / R210 - Bang & Olufsen", page 86](#)

⇒ ["2.13.3 Removing and installing effect loudspeakers R209 / R210 - Avant", page 87](#)

2.13.1 Removing and installing effect loudspeakers -R209- / -R210- - BOSE

Special tools and workshop equipment required

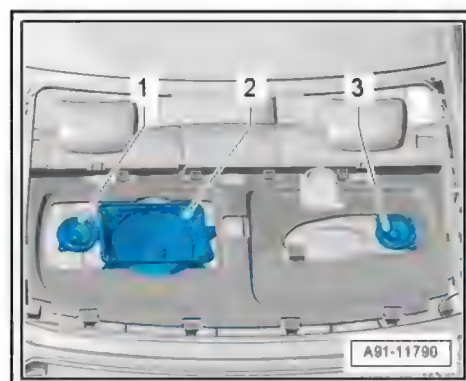
◆ Torque screwdriver - V.A.G 1624-



The left effect loudspeaker - R209- -1- and the right effect loudspeaker - R210- -2- are located in the rear shelf (left and right). Effect loudspeakers are bolted to loudspeaker trim.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove loudspeaker trim ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing loudspeaker trim .
- Release and unplug connector at left effect loudspeaker - R209- .



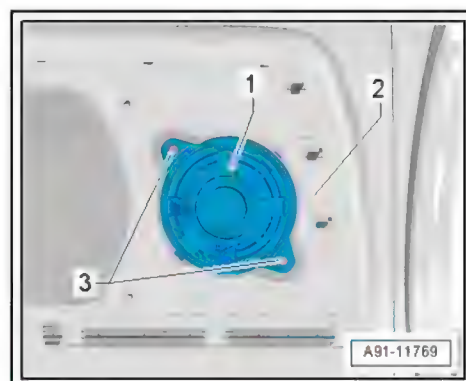
- Unscrew bolts -3- at left effect loudspeaker - R209- -1-.
- Lift left effect loudspeaker - R209- -1- off loudspeaker trim -2-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ [“2.2.1 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Saloon”, page 46](#)



2.13.2 Removing and installing effect loudspeakers -R209- / -R210- - Bang & Olufsen

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-





The left effect loudspeaker - R209- and the right effect loudspeaker - R210- are located in the rear shelf (left and right).

Removing

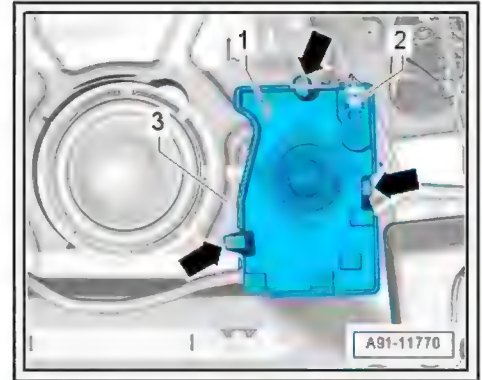
- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear shelf ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim; Removing and installing rear shelf .
- Unscrew bolts -arrows- at left effect loudspeaker - R209- -1-.
- Release and unplug connector -2- at left effect loudspeaker - R209- -1-.
- Lift left effect loudspeaker - R209- -1- off rear shelf -3-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["2.2.3 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Saloon", page 50](#)



2.13.3 Removing and installing effect loudspeakers -R209- / -R210- - Avant

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



The left effect loudspeaker - R209- and the right effect loudspeaker - R210- are located in the D-pillars (left and right).

The removal and installation procedure is similar for all components.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove D-pillar trim ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing D-pillar trim .
- Release and unplug connector at left effect loudspeaker - R209- .

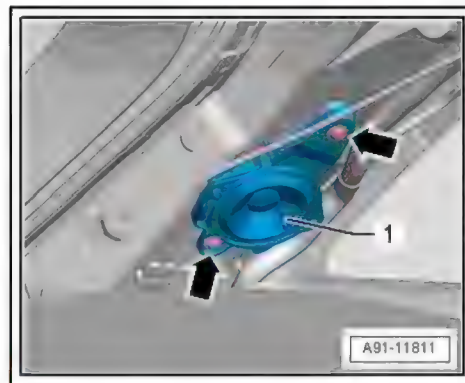
- Unscrew bolts -arrows- at left effect loudspeaker - R209- -1-.
- Detach left effect loudspeaker - R209- -1- from D-pillar.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ [“2.2.2 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Avant”, page 48](#)
- ◆ ⇒ [“2.2.4 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Avant”, page 52](#)



2.14 Removing and installing centre loudspeaker

⇒ [“2.14.1 Removing and installing centre loudspeaker R208”, page 88](#)

⇒ [“2.14.2 Removing and installing centre loudspeaker 2 R219 - Bang & Olufsen”, page 89](#)

2.14.1 Removing and installing centre loudspeaker - R208-

Special tools and workshop equipment required

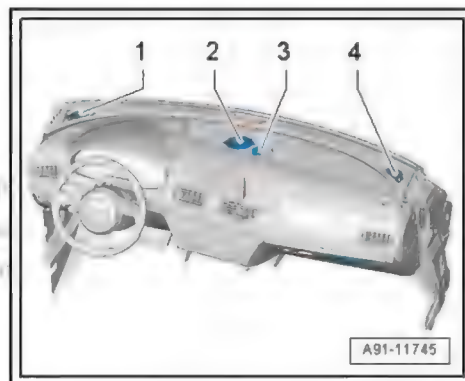
- ◆ Torque screwdriver - V.A.G 1624-



The centre loudspeaker - R208- -2- is located in the dash panel (front centre).

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove centre loudspeaker trim ⇒ General body repairs, interior; Rep. gr. 70; Dash panel; Removing and installing loudspeaker trim.



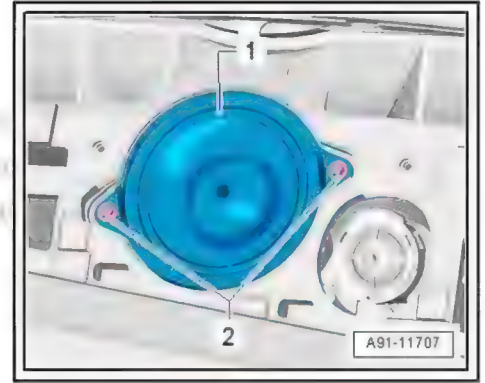
- Remove bolts -2- on centre loudspeaker - R208- -1-.
- Release and unplug connector at centre loudspeaker - R208- -1-.
- Remove centre loudspeaker - R208- -1- from dash panel.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["2.2.1 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Saloon", page 46](#)
- ◆ ⇒ ["2.2.2 Overview of fitting locations - sound system, loudspeakers \(standard/BOSE\), Avant", page 48](#)
- ◆ ⇒ ["2.2.3 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Saloon", page 50](#)
- ◆ ⇒ ["2.2.4 Overview of fitting locations - sound system, loudspeakers \(Bang & Olufsen\), Avant", page 52](#)

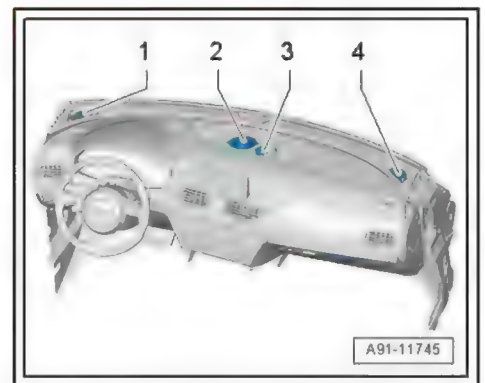


2.14.2 Removing and installing centre loudspeaker 2 - R219- - Bang & Olufsen

The centre loudspeaker 2 - R219- -3- is located in the dash panel (front centre).

Removing

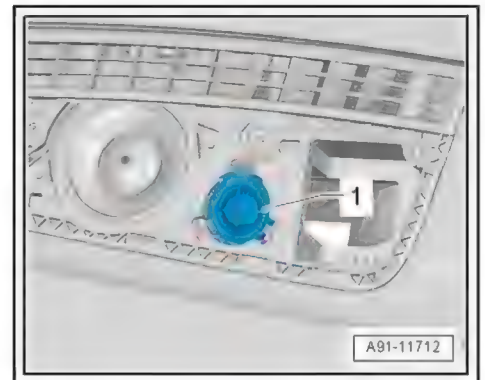
- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove centre loudspeaker trim ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing loudspeaker trim .



- Unclip centre loudspeaker 2 - R219- -1- from dash panel.
- Release and unplug connector at centre loudspeaker 2 - R219- -1-.

Installing

- Install in reverse sequence of removal.



2.15 Removing and installing ANC microphones

The ANC microphones are located in the moulded headliner.

ANC microphones - overview ⇒ [page 57](#) .

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.

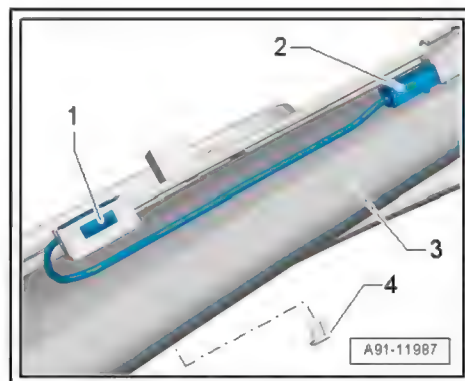
To remove ANC microphones, moulded headliner must be lowered on appropriate side.

- Lower moulded headliner ➔ General body repairs, interior; Rep. gr. 70 ; Roof trim; Removing and installing moulded headliner .
- Unplug connector -2- on appropriate microphone.
- Pry microphone -1- out of retainer and remove from moulded headliner -3-.

Cover -4- remains in moulded headliner.

Installing

- Install in reverse sequence of removal.



2.16 Pin assignment

➔ ["2.16.1 Pin assignment for digital sound package control unit J525 - BOSE, up to model year 2014", page 90](#)

➔ ["2.16.2 Pin assignment for digital sound package control unit J525 - Bang & Olufsen, up to model year 2014", page 93](#)

➔ ["2.16.3 Pin assignment for digital sound package control unit 2 J787 - Bang & Olufsen, up to model year 2014", page 95](#)

2.16.1 Pin assignment for digital sound package control unit - J525- - BOSE, up to model year 2014

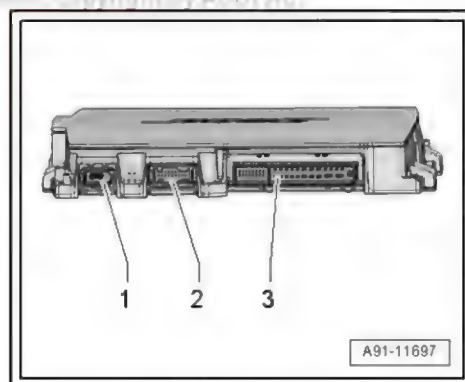
Digital sound package control unit - J525-

- 1 - MOST bus
- 2 - 18-pin connector - T18-
- 3 - 38-pin connector - T38-

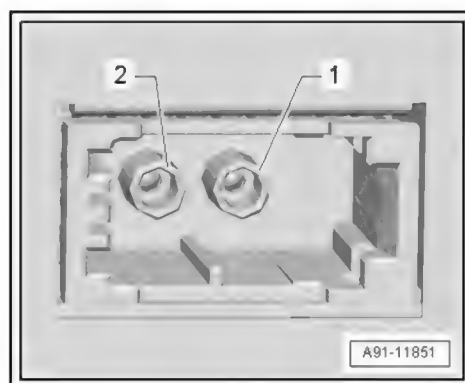


Note

Contacts which are not listed are not used.



- 1 - MOST bus
- 1 - Output
- 2 - Input





2 - 18-pin connector - T18-

6 - Rear left microphone - R144- (+)

7 - Rear left microphone - R144- (-)

8 - Rear right microphone - R145- (+)

9 - Rear right microphone - R145- (-)

10 - Engine speed signal from engine control unit - J623- (+)

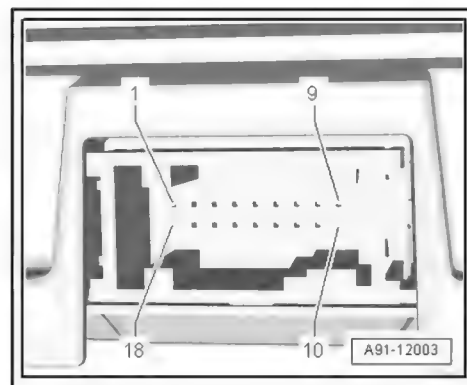
11 - Engine speed signal from engine control unit - J623- (-)

13 - Centre right microphone - R143- (+)

14 - Centre right microphone - R143- (-)

16 - Centre left microphone - R142- (+)

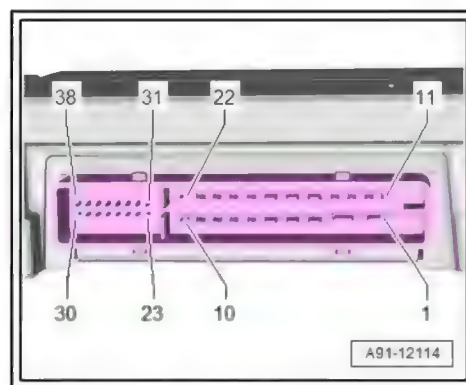
17 - Centre left microphone - R142- (-)



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3 - 38-pin connector - T38-

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Loudspeaker (+), rear right
- 4 - Front left bass loudspeaker - R21- (+)
- 5 - Subwoofer - R211- (-)
- 6 - Not used
- 7 - Front left mid-range loudspeaker - R103- (-)
- 8 - Front right mid-range loudspeaker - R104- (+)
- 9 - Front right treble loudspeaker - R22- (-)
- 10 - Front left treble loudspeaker - R20- (+)
- 11 - Front right bass loudspeaker - R23- (-)
- 12 - Front right bass loudspeaker - R23- (+)
- 13 - Loudspeaker (+), rear left
- 14 - Loudspeaker (-), rear left
- 15 - Loudspeaker (-), rear right
- 16 - Front left bass loudspeaker - R21- (-)
- 17 - Subwoofer - R211- (+)
- 18 - Not used
- 19 - Front left mid-range loudspeaker - R103- (+)
- 20 - Front right mid-range loudspeaker - R104- (-)
- 21 - Front right treble loudspeaker - R22- (+)
- 22 - Front left treble loudspeaker - R20- (-)
- 23 - Not used
- 24 - Not used
- 25 - Open circuit diagnostic lead
- 26 - Not used
- 27 - Not used
- 28 - Screen earth from microphone unit in front roof module - R164- , internal microphone - R74-
- 29 - Microphone unit in front roof module - R164- , internal microphone - R74- (-)
- 30 - Microphone unit in front roof module - R164- , internal microphone - R74- (+)
- 31 - Centre loudspeaker - R208- (+)
- 32 - Centre loudspeaker - R208- (-)
- 33 - Left effect loudspeaker - R209- (-)
- 34 - Left effect loudspeaker - R209- (+)
- 35 - Not used
- 36 - Not used
- 37 - Right effect loudspeaker - R210- (+)
- 38 - Right effect loudspeaker - R210- (-)





2.16.2 Pin assignment for digital sound package control unit - J525- - Bang & Olufsen, up to model year 2014

Digital sound package control unit - J525-

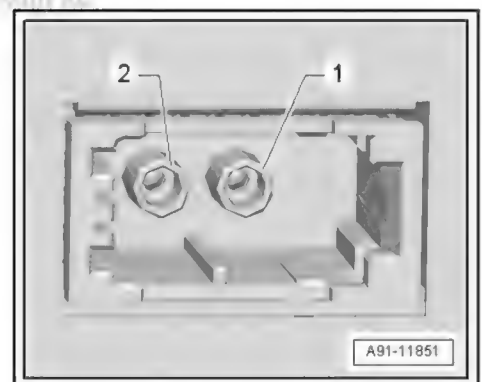
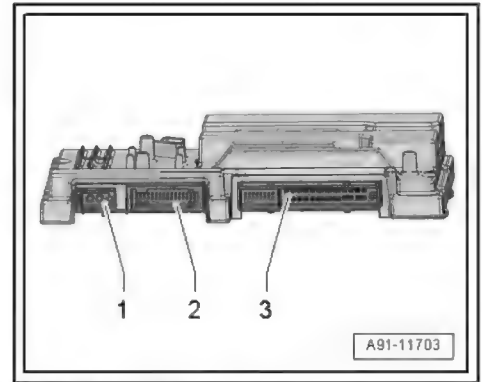
- 1 - MOST bus
- 2 - 32-pin connector - T32e-
- 3 - 38-pin connector - T38-



Note

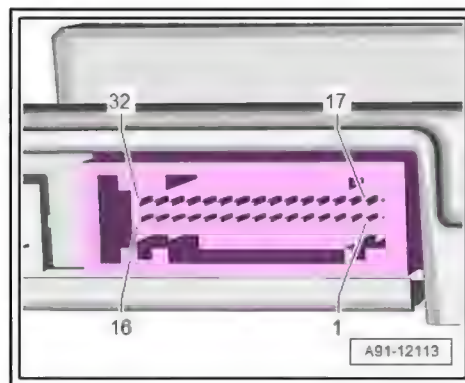
Contacts which are not listed are not used.

- 1 - MOST bus
- 1 - Output
- 2 - Input



2 - 32-pin connector - T32e-

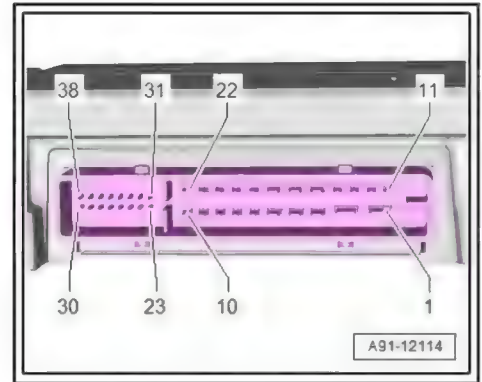
- 1 - Digital sound package control unit 2 - J787-
- 2 - Digital sound package control unit 2 - J787-
- 3 - Digital sound package control unit 2 - J787-
- 4 - Digital sound package control unit 2 - J787-
- 5 - Digital sound package control unit 2 - J787-
- 6 - Centre left microphone - R142- (+)
- 7 - Centre right microphone - R143- (+)
- 8 - Rear left microphone - R144- (+)
- 9 - Microphone unit in front roof module - R164- , internal microphone - R74- (+)
- 10 - Rear right microphone - R145- (+)
- 11 - Screen earth
- 12 - Engine speed signal from engine control unit - J623- (+)
- 13 - Not used
- 14 - Digital sound package control unit 2 - J787-
- 15 - Not used
- 16 - Digital sound package control unit 2 - J787-
- 17 - Digital sound package control unit 2 - J787-
- 18 - Digital sound package control unit 2 - J787-
- 19 - Digital sound package control unit 2 - J787-
- 20 - Digital sound package control unit 2 - J787-
- 21 - Digital sound package control unit 2 - J787-
- 22 - Centre left microphone - R142- (-)
- 23 - Centre right microphone - R143- (-)
- 24 - Rear left microphone - R144- (-)
- 25 - Microphone unit in front roof module - R164- , internal microphone - R74- (-)
- 26 - Rear right microphone - R145- (-)
- 27 - Not used
- 28 - Engine speed signal from engine control unit - J623- (-)
- 29 - Open circuit diagnostic lead
- 30 - Digital sound package control unit 2 - J787-
- 31 - Not used
- 32 - Digital sound package control unit 2 - J787-





3 - 38-pin connector - T38-

- 1 - Terminal 30
- 2 - Terminal 31
- 5 - Front left mid-range loudspeaker - R103- (+)
- 6 - Front right mid-range loudspeaker - R104- (+)
- 7 - Centre loudspeaker - R208- (+)
- 8 - Centre loudspeaker 2 - R219- (+)
- 9 - Left effect loudspeaker - R209- (+)
- 10 - Right effect loudspeaker - R210- (+)
- 17 - Front left mid-range loudspeaker - R103- (-)
- 18 - Front right mid-range loudspeaker - R104- (-)
- 19 - Centre loudspeaker - R208- (-)
- 20 - Centre loudspeaker 2 - R219- (-)
- 21 - Left effect loudspeaker - R209- (-)
- 22 - Right effect loudspeaker - R210- (-)
- 23 - Front left treble loudspeaker - R20- (+)
- 24 - Front right treble loudspeaker - R22- (+)
- 25 - Rear left treble loudspeaker - R14- (+)
- 26 - Rear right treble loudspeaker - R16- (+)
- 31 - Front left treble loudspeaker - R20- (-)
- 32 - Front right treble loudspeaker - R22- (-)
- 33 - Rear left treble loudspeaker - R14- (-)
- 34 - Rear right treble loudspeaker - R16- (-)



2.16.3 Pin assignment for digital sound package control unit 2 - J787- - Bang & Olufsen, up to model year 2014

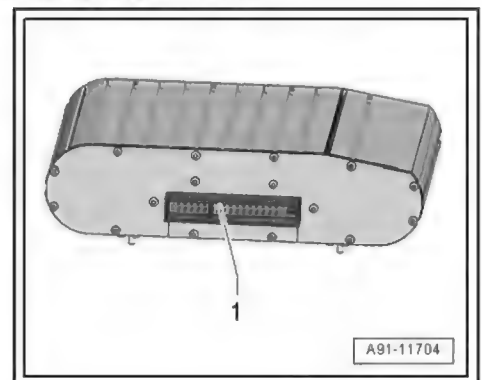
Digital sound package control unit 2 - J787-

- 1 - 32-pin connector - T32f-



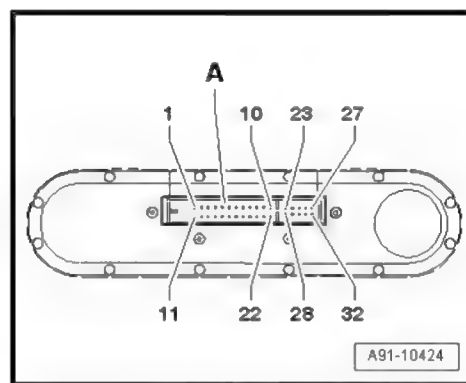
Note

Contacts which are not listed are not used.



1 - 32-pin connector - T32f-

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Front right bass loudspeaker - R23- (+)
- 4 - Front right bass loudspeaker - R23- (-)
- 5 - Front left bass loudspeaker - R21- (+)
- 6 - Control motor for front left treble speaker - V344- (-)
- 7 - Control motor for front left treble speaker - V344-
- 8 - Digital sound package control unit - J525-
- 9 - Digital sound package control unit - J525-
- 10 - Digital sound package control unit - J525-
- 11 - Digital sound package control unit - J525-
- 12 - Digital sound package control unit - J525-
- 13 - Digital sound package control unit - J525-
- 14 - Digital sound package control unit - J525-
- 15 - Subwoofer - R211- (+)
- 16 - Subwoofer - R211- (-)
- 17 - Front left bass loudspeaker - R21- (-)
- 18 - Control motor for front left treble speaker - V344- (+)
- 19 - Control motor for front right treble loudspeaker - V345-
- 20 - Digital sound package control unit - J525-
- 21 - Control motor for front right treble speaker - V345- (+)
- 22 - Control motor for front right treble speaker - V345- (-)
- 23 - Digital sound package control unit - J525-
- 24 - Digital sound package control unit - J525-
- 25 - Digital sound package control unit - J525-
- 26 - Digital sound package control unit - J525-
- 27 - Digital sound package control unit - J525-
- 28 - Rear right mid-range and bass loudspeaker - R160- (+)
- 29 - Rear right mid-range and bass loudspeaker - R160- (-)
- 30 - Digital sound package control unit - J525-
- 31 - Rear left mid-range and bass loudspeaker - R159- (+)
- 32 - Rear left mid-range and bass loudspeaker - R159- (-)





3 Aerial systems

⇒ ["3.1 Layout - aerial systems", page 97](#)

⇒ ["3.2 Overview of fitting locations - aerial systems", page 100](#)

⇒ ["3.3 Removing and installing aerial amplifiers", page 110](#)

⇒ ["3.4 Removing and installing window aerial suppression filter C18", page 116](#)

⇒ ["3.5 Removing and installing traffic data aerial", page 118](#)

⇒ ["3.6 Removing and installing dedicated short-range communication aerial", page 119](#)

⇒ ["3.7 Removing and installing emergency call module aerial", page 120](#)

⇒ ["3.8 Removing and installing roof aerial", page 120](#)

⇒ ["3.9 Removing and installing bumper aerals", page 121](#)

⇒ ["3.10 Pin assignment", page 123](#)

3.1 Layout - aerial systems

⇒ ["3.1.1 Layout - aerial systems, Europe and rest-of-world vehicles", page 97](#)

⇒ ["3.1.2 Layout - aerial systems, USA", page 98](#)

⇒ ["3.1.3 Layout - aerial systems, Russia", page 99](#)

3.1.1 Layout - aerial systems, Europe and rest-of-world vehicles

The aerial system consists of the roof aerial - R216-, the rear window aerals and, from model year 2015 onwards, the bumper aerals.

Roof aerial - R216-

- ◆ GPS aerial - R50-, 7T2, 7T6 and 7UG only
- ◆ Telephone aerial - R65-, 9ZE and EL0 only
- ◆ LTE aerial 1 - R297-, EL3 only
- ◆ Auxiliary heater aerial - R182-, 9M9 and Europe only

Window aerals (Saloon)

- ◆ Radio aerial 2 - R93- (AM/FM1)/ central locking and anti-theft alarm system aerial - R47- (FZV, remote locking) to aerial amplifier 2 - R111- at D-pillar (top left)
- ◆ Aerial - R11- (FM2)/ TV aerial 2 - R56- (TV2) to aerial amplifier - R24- at D-pillar (bottom left)
- ◆ Digital radio aerial - R183- (DAB)/ TV aerial 1 - R55- (TV1) to aerial amplifier 3 - R112- at D-pillar (top right)
- ◆ TV aerial 3 - R57- (TV3) to aerial amplifier 4 - R113- at D-pillar (bottom right)

Window aerals (Avant)

- ◆ Radio aerial 2 - R93- (AM/FM1)/ central locking and anti-theft alarm system aerial - R47- (FZV, remote locking) to aerial amplifier 2 - R111- on rear lid (top left), up to model year 2013
- ◆ Radio aerial 2 - R93- (AM/FM1) to aerial amplifier 2 - R111- on rear lid (top left), from model year 2014 onwards

- ◆ Aerial - R11- (FM2)/ TV aerial 1 - R55- (TV1) to aerial amplifier - R24- on rear lid (bottom left)
- ◆ TV aerial 2 - R56- (TV2) to aerial amplifier 4 - R113- on rear lid (top right)
- ◆ Digital radio aerial - R183- (DAB)/ TV aerial 3 - R57- (TV3) to aerial amplifier 3 - R112- at C-pillar (left-side)

Bumper aërials

- ◆ Telephone aerial - R65- underneath rear bumper cover (left-side), 9ZC only
- ◆ LTE aerial 2 - R306- underneath rear bumper cover (right-side), EL3 only

Other aërials

- ◆ Dedicated short-range communication aerial - R269- behind instrument cluster, Japan only
- ◆ Traffic data aerial - R173- on windscreen (top), Japan only
- ◆ Emergency call module aerial - R263- in dash panel (front centre), IW3 only

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

3.1.2 Layout - aerial systems, USA

The aerial system consists of the roof aerial - R216- , the rear window aërials and, from model year 2015 onwards, the bumper aërials.

Roof aerial - R216-

- ◆ GPS aerial - R50- , 7T2, 7T6 and 7UG only
- ◆ Telephone aerial - R65- , 9ZE and EL0 only
- ◆ Satellite aerial - R170- , QV8 only

Window aërials (Saloon)

- ◆ Radio aerial 2 - R93- (AM/FM1)/ central locking and anti-theft alarm system aerial - R47- (FZV, remote locking) to aerial amplifier 2 - R111- at D-pillar (top left)
- ◆ Aerial - R11- (FM2)/ TV aerial 2 - R56- (TV2) to aerial amplifier - R24- at D-pillar (bottom left)
- ◆ TV aerial 1 - R55- (TV1) to aerial amplifier 3 - R112- at D-pillar (top right)
- ◆ TV aerial 3 - R57- (TV3) to aerial amplifier 4 - R113- at D-pillar (bottom right)

Window aërials (Avant)

- ◆ Radio aerial 2 - R93- (AM/FM1)/ central locking and anti-theft alarm system aerial - R47- (FZV, remote locking) to aerial amplifier 2 - R111- on rear lid (top left), up to model year 2013
- ◆ Radio aerial 2 - R93- (AM/FM1) to aerial amplifier 2 - R111- on rear lid (top left), from model year 2014 onwards
- ◆ Aerial - R11- (FM2)/ TV aerial 1 - R55- (TV1) to aerial amplifier - R24- on rear lid (bottom left)
- ◆ TV aerial 2 - R56- (TV2) to aerial amplifier 4 - R113- on rear lid (top right)
- ◆ TV aerial 3 - R57- (TV3) to aerial amplifier 3 - R112- at C-pillar (left-side)



Bumper aerials

- ◆ LTE aerial 1 - R297- underneath rear bumper cover (left-side), EL3 only
- ◆ LTE aerial 2 - R306- underneath rear bumper cover (right-side), EL3 only

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

3.1.3 Layout - aerial systems, Russia

The aerial system consists of the roof aerial - R216- , the rear window aeralis and the bumper aeralis.

Roof aerial - R216-

- ◆ GPS aerial - R50- , 7UG and IW1 only
- ◆ LTE aerial 1 - R297- , EL3 only
- ◆ Auxiliary heater aerial - R182- , 9M9 only

Window aeralis (Saloon)

- ◆ Radio aerial 2 - R93- (AM/FM1)/ central locking and anti-theft alarm system aerial - R47- (FZV, remote locking) to aerial amplifier 2 - R111- at D-pillar (top left)
- ◆ Aerial - R11- (FM2)/ TV aerial 2 - R56- (TV2) to aerial amplifier - R24- at D-pillar (bottom left)
- ◆ Digital radio aerial - R183- (DAB)/ TV aerial 1 - R55- (TV1) to aerial amplifier 3 - R112- at D-pillar (top right)
- ◆ TV aerial 3 - R57- (TV3) to aerial amplifier 4 - R113- at D-pillar (bottom right)

Window aeralis (Avant)

- ◆ Radio aerial 2 - R93- (AM/FM1) to aerial amplifier 2 - R111- on rear lid (top left)
- ◆ Aerial - R11- (FM2)/ TV aerial 1 - R55- (TV1) to aerial amplifier - R24- on rear lid (bottom left)
- ◆ TV aerial 2 - R56- (TV2) to aerial amplifier 4 - R113- on rear lid (top right)
- ◆ Digital radio aerial - R183- (DAB)/ TV aerial 3 - R57- (TV3) to aerial amplifier 3 - R112- at C-pillar (left-side)

Bumper aeralis

- ◆ LTE aerial 2 - R306- underneath rear bumper cover (right-side), EL3 only
- ◆ Telephone aerial - R65- underneath rear bumper cover (left-side), 9ZC/9ZE only

Other aeralis

- ◆ Emergency call module aerial - R263- in dash panel (front centre), IW1 only

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

3.2 Overview of fitting locations - aerial systems

⇒ ["3.2.1 Overview of fitting locations - aerial systems, Saloon, Europe and rest-of-world vehicles", page 100](#)

⇒ ["3.2.2 Overview of fitting locations - aerial systems, Saloon, USA", page 102](#)

⇒ ["3.2.3 Overview of fitting locations - aerial systems, Saloon, Russia", page 103](#)

⇒ ["3.2.4 Overview of fitting locations - aerial systems, Avant, Europe and rest-of-world vehicles", page 105](#)

⇒ ["3.2.5 Overview of fitting locations - aerial systems, Avant, USA", page 107](#)

⇒ ["3.2.6 Overview of fitting locations - aerial systems, Avant, Russia", page 108](#)

3.2.1 Overview of fitting locations - aerial systems, Saloon, Europe and rest-of-world vehicles

1 - Nut

- 9 Nm

2 - Window aerial suppression filter - C18-

- Removing and installing
⇒ [page 116](#)

3 - Nut

- 9 Nm

4 - Nut

- 9 Nm

5 - Aerial amplifier 3 - R112-

- Pin assignment
⇒ [page 124](#)
- Removing and installing
⇒ [page 110](#)

6 - Bolt

- 2 Nm

7 - Aerial amplifier 4 - R113-

- Pin assignment
⇒ [page 125](#)
- Removing and installing
⇒ [page 111](#)

8 - Bolt

- 2 Nm

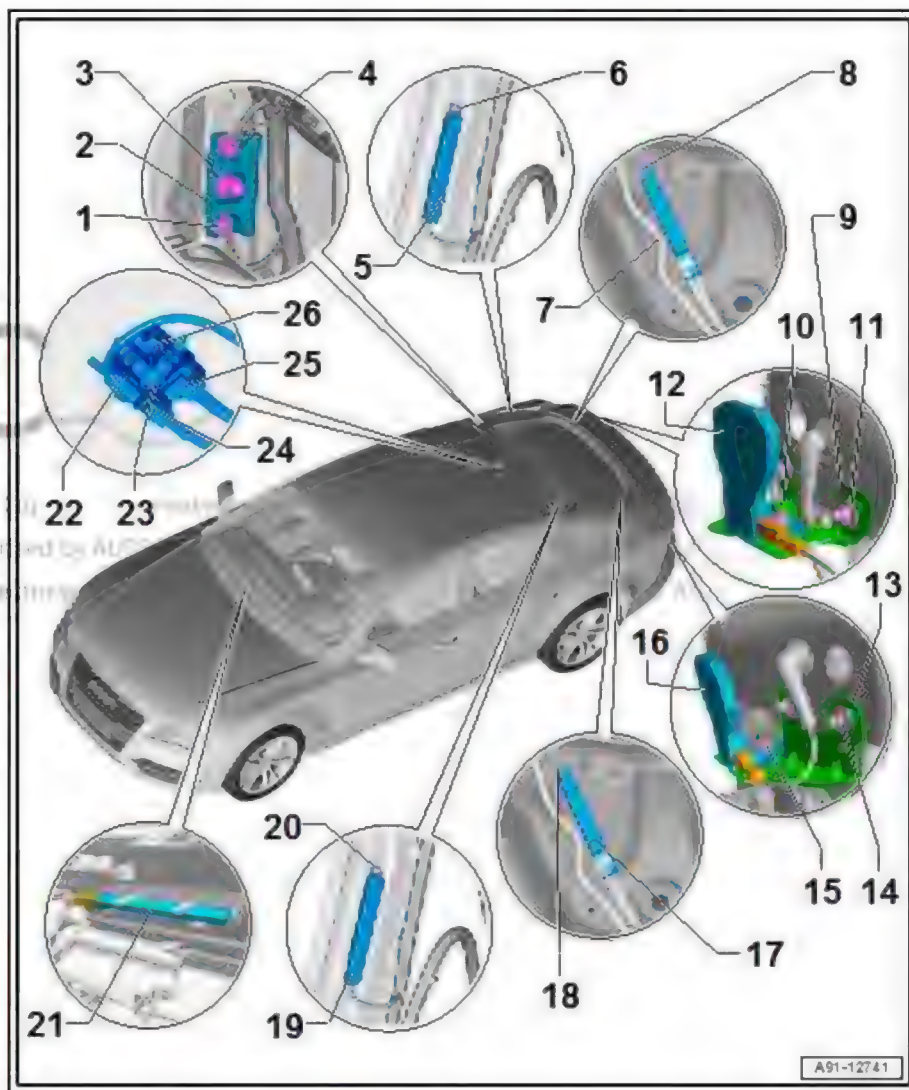
9 - Bracket

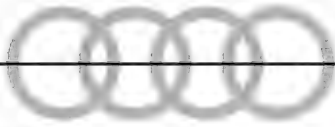
10 - Nut

- 4 Nm

11 - Nut

- 2x
- 4 Nm





12 - LTE aerial 2 - R306-

- ☐ Removing and installing ⇒ [page 121](#)

13 - Bracket

14 - Nut

- ☐ 2x
- ☐ 4 Nm

15 - Nut

- ☐ 4 Nm

16 - Telephone aerial - R65-

- ☐ Removing and installing ⇒ [page 121](#)

17 - Aerial amplifier - R24-

- ☐ Pin assignment ⇒ [page 123](#)
- ☐ Removing and installing ⇒ [page 111](#)

18 - Bolt

- ☐ 2 Nm

19 - Aerial amplifier 2 - R111-

- ☐ Pin assignment ⇒ [page 123](#)
- ☐ Removing and installing ⇒ [page 110](#)

20 - Bolt

- ☐ 2 Nm

21 - Emergency call module aerial - R263-

- ☐ Removing and installing ⇒ [page 120](#)

22 - RC connection from auxiliary heater aerial - R182-

23 - Bolt

- ☐ 6 Nm

24 - GSM connection from telephone aerial - R65-

- LTE connection from LTE aerial 1 - R297-

- ☐ Aerial assignment according to equipment version

25 - GPS connection from GPS aerial - R50-

26 - Roof aerial - R216-

- ☐ Pin assignment ⇒ [page 126](#)
- ☐ Removing and installing ⇒ [page 120](#)

3.2.2 Overview of fitting locations - aerial systems, Saloon, USA

1 - Nut

- 9 Nm

2 - Window aerial suppression filter - C18-

- Removing and installing ⇒ [page 116](#)

3 - Nut

- 9 Nm

4 - Nut

- 9 Nm

5 - Aerial amplifier 3 - R112-

- Pin assignment ⇒ [page 124](#)
- Removing and installing ⇒ [page 110](#)

6 - Bolt

- 2 Nm

7 - Aerial amplifier 4 - R113-

- Pin assignment ⇒ [page 125](#)
- Removing and installing ⇒ [page 111](#)

8 - Bolt

- 2 Nm

9 - Bracket

10 - Nut

- 4 Nm

11 - Nut

- 2x
- 4 Nm

12 - LTE aerial 2 - R306-

- Removing and installing ⇒ [page 121](#)

13 - Bracket

14 - Nut

- 2x
- 4 Nm

15 - Nut

- 4 Nm

16 - LTE aerial 1 - R297-

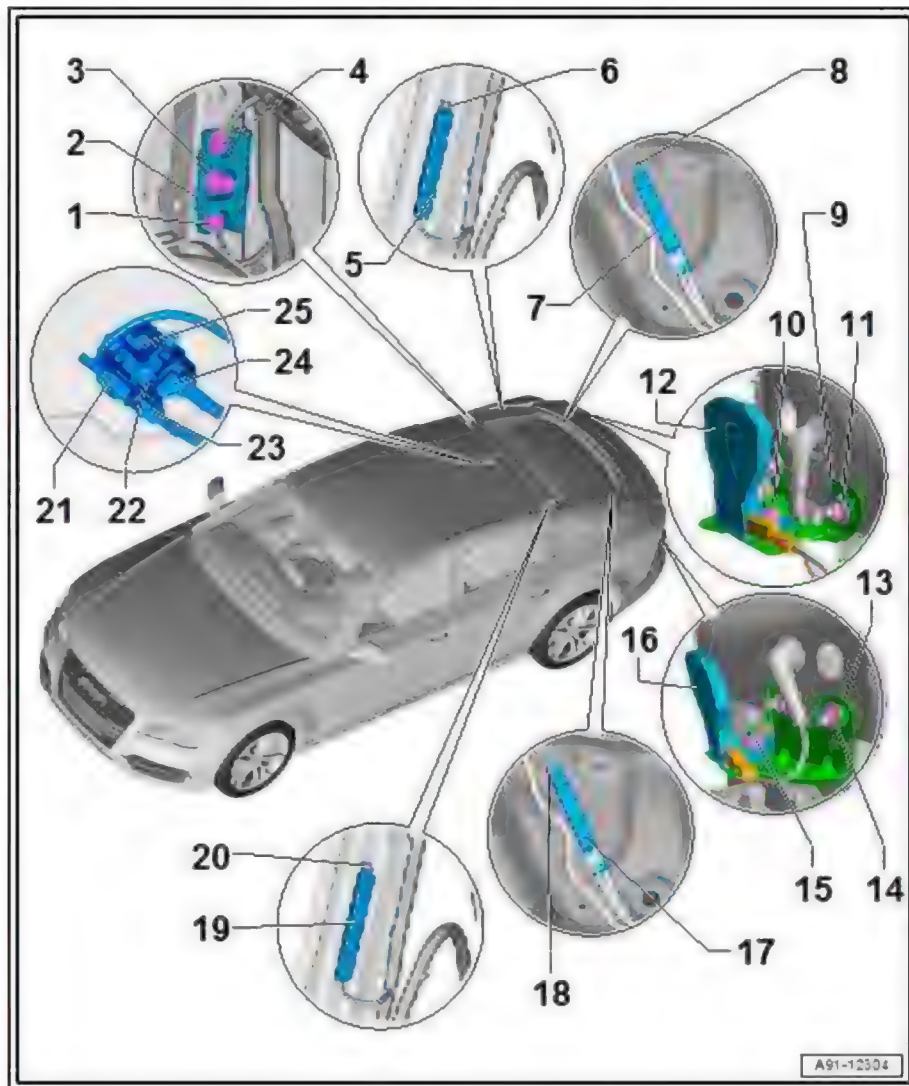
- Removing and installing ⇒ [page 121](#)

17 - Aerial amplifier - R24-

- Pin assignment ⇒ [page 123](#)
- Removing and installing ⇒ [page 111](#)

18 - Bolt

- 2 Nm





19 - Aerial amplifier 2 - R111-

- ☐ Pin assignment ➔ [page 123](#)
- ☐ Removing and installing ➔ [page 110](#)

20 - Bolt

- ☐ 2 Nm

21 - SAT connection from satellite aerial - R170-

22 - Bolt

- ☐ 6 Nm

23 - GSM connection from telephone aerial - R65-

24 - GPS connection from GPS aerial - R50-

25 - Roof aerial - R216-

- ☐ Pin assignment ➔ [page 126](#)
- ☐ Removing and installing ➔ [page 120](#)

3.2.3 Overview of fitting locations - aerial systems, Saloon, Russia

1 - Nut

- ☐ 9 Nm

2 - Window aerial suppression filter - C18-

- ☐ Removing and installing ➔ [page 116](#)

3 - Nut

- ☐ 9 Nm

4 - Nut

- ☐ 9 Nm

5 - Aerial amplifier 3 - R112-

- ☐ Pin assignment ➔ [page 124](#)
- ☐ Removing and installing ➔ [page 110](#)

6 - Bolt

- ☐ 2 Nm

7 - Aerial amplifier 4 - R113-

- ☐ Pin assignment ➔ [page 125](#)
- ☐ Removing and installing ➔ [page 111](#)

8 - Bolt

- ☐ 2 Nm

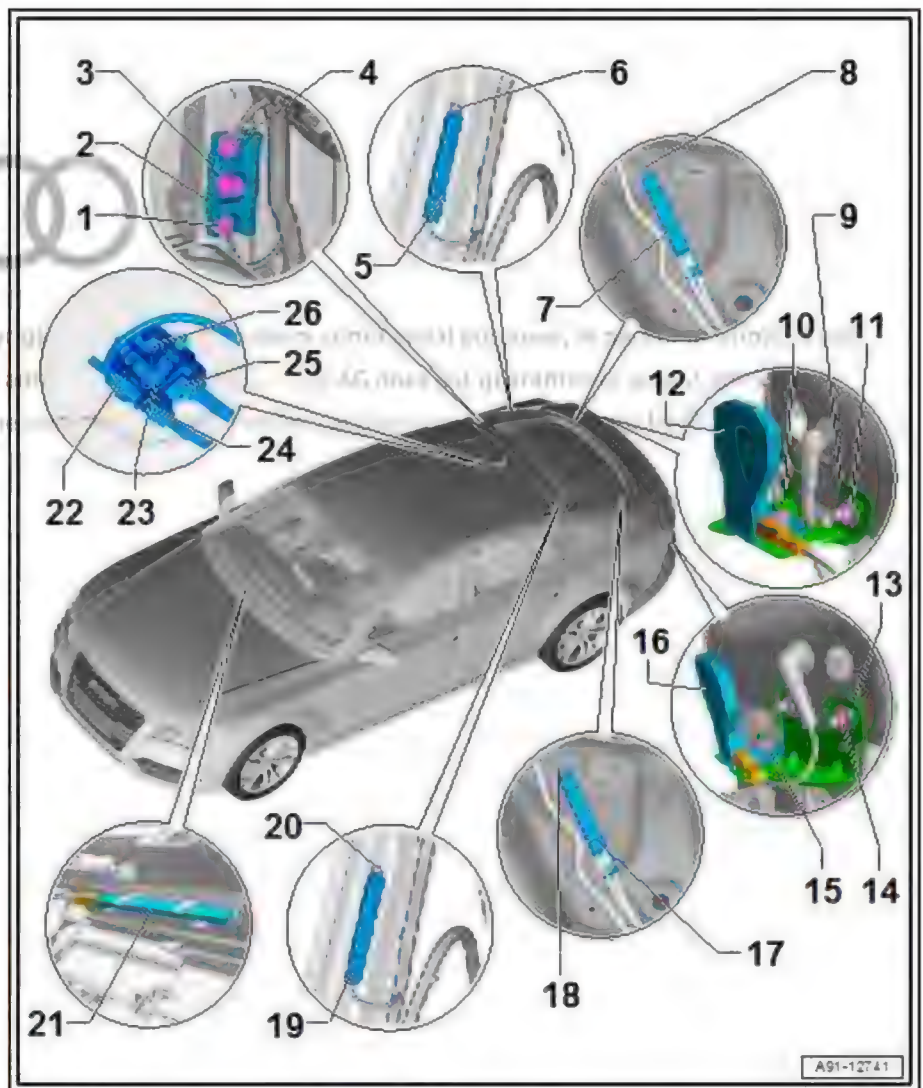
9 - Bracket

10 - Nut

- ☐ 4 Nm

11 - Nut

- ☐ 2x
- ☐ 4 Nm



A91-12741



12 - LTE aerial 2 - R306-

- ☐ Removing and installing ⇒ [page 121](#)

13 - Bracket

14 - Nut

- ☐ 2x
- ☐ 4 Nm

15 - Nut

- ☐ 4 Nm

16 - Telephone aerial - R65- , 9ZC/9ZE

- ☐ Removing and installing ⇒ [page 121](#)

17 - Aerial amplifier - R24-

- ☐ Pin assignment ⇒ [page 123](#)
- ☐ Removing and installing ⇒ [page 111](#)

18 - Bolt

- ☐ 2 Nm

19 - Aerial amplifier 2 - R111-

- ☐ Pin assignment ⇒ [page 123](#)
- ☐ Removing and installing ⇒ [page 110](#)

20 - Bolt

- ☐ 2 Nm

21 - Emergency call module aerial - R263-

- ☐ Removing and installing ⇒ [page 120](#)

22 - RC connection from auxiliary heater aerial - R182-

23 - Bolt

- ☐ 6 Nm

24 - LTE connection from LTE aerial 1 - R297-

25 - GPS connection from GPS aerial - R50-

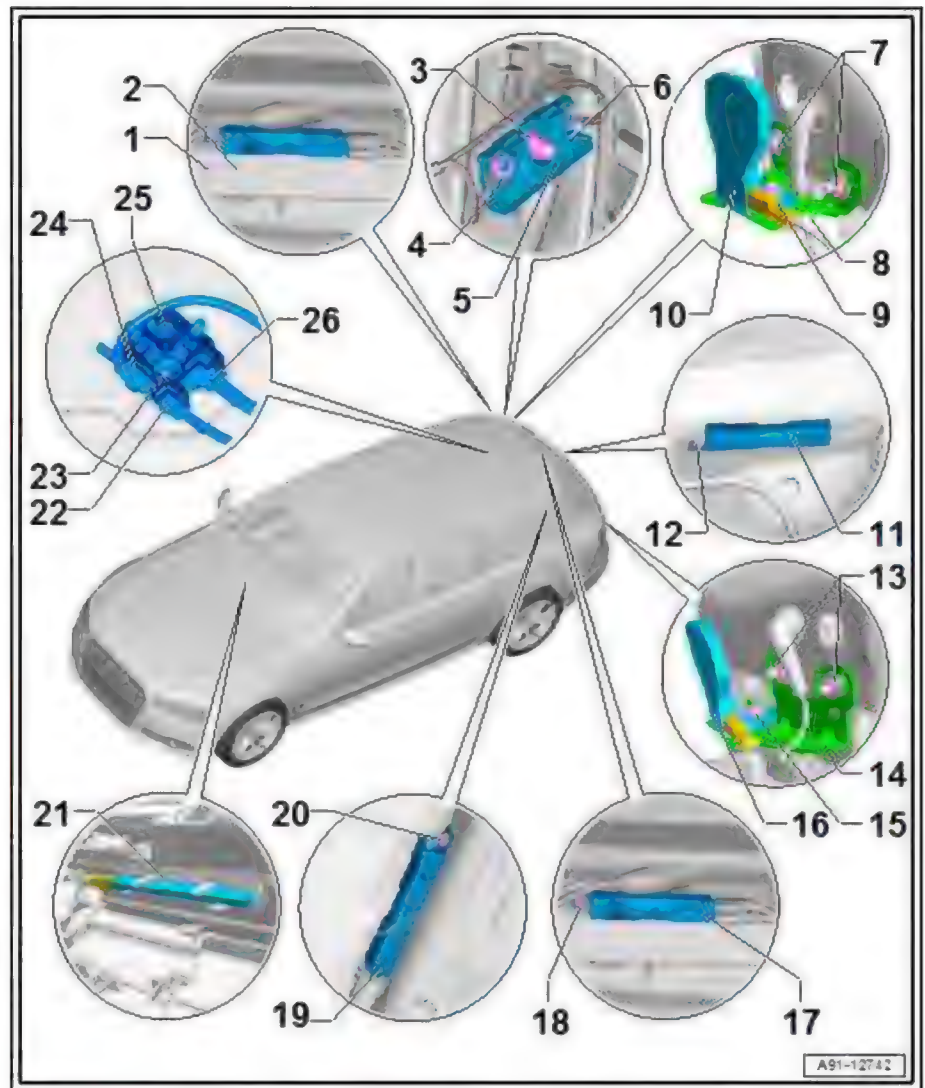
26 - Roof aerial - R216-

- ☐ Pin assignment ⇒ [page 126](#)
- ☐ Removing and installing ⇒ [page 120](#)



3.2.4 Overview of fitting locations - aerial systems, Avant, Europe and rest-of-world vehicles

- 1 - Bolt
 - ☐ 2 Nm
- 2 - Aerial amplifier 4 - R113-
 - ☐ Pin assignment ➔ [page 126](#)
 - ☐ Removing and installing ➔ [page 114](#)
- 3 - Nut
 - ☐ 9 Nm
- 4 - Nut
 - ☐ 9 Nm
- 5 - Window aerial suppression filter - C18-
 - ☐ Removing and installing ➔ [page 117](#)
- 6 - Nut
 - ☐ 9 Nm
- 7 - Nut
 - ☐ 2x
 - ☐ 4 Nm
- 8 - Bracket
- 9 - Nut
 - ☐ 4 Nm
- 10 - LTE aerial 2 - R306-
 - ☐ Removing and installing ➔ [page 121](#)
- 11 - Aerial amplifier - R24-
 - ☐ Pin assignment ➔ [page 124](#)
 - ☐ Removing and installing ➔ [page 112](#)
- 12 - Bolt
 - ☐ 2 Nm
- 13 - Nut
 - ☐ 2x
 - ☐ 4 Nm
- 14 - Bracket
- 15 - Nut
 - ☐ 4 Nm
- 16 - Telephone aerial - R65-
 - ☐ Removing and installing ➔ [page 121](#)
- 17 - Aerial amplifier 2 - R111-
 - ☐ Pin assignment ➔ [page 123](#)
 - ☐ Removing and installing ➔ [page 113](#)





18 - Bolt

- 2 Nm

19 - Aerial amplifier 3 - R112-

- Pin assignment ⇒ [page 125](#)
- Removing and installing ⇒ [page 115](#)

20 - Bolt

- 2 Nm

21 - Emergency call module aerial - R263-

- Removing and installing ⇒ [page 120](#)

22 - GSM connection from telephone aerial - R65-

- LTE connection from LTE aerial 1 - R297-

- Aerial assignment according to equipment version

23 - Bolt

- 6 Nm

24 - RC connection from auxiliary heater aerial - R182-

25 - Roof aerial - R216-

- Pin assignment ⇒ [page 126](#)
- Removing and installing ⇒ [page 120](#)

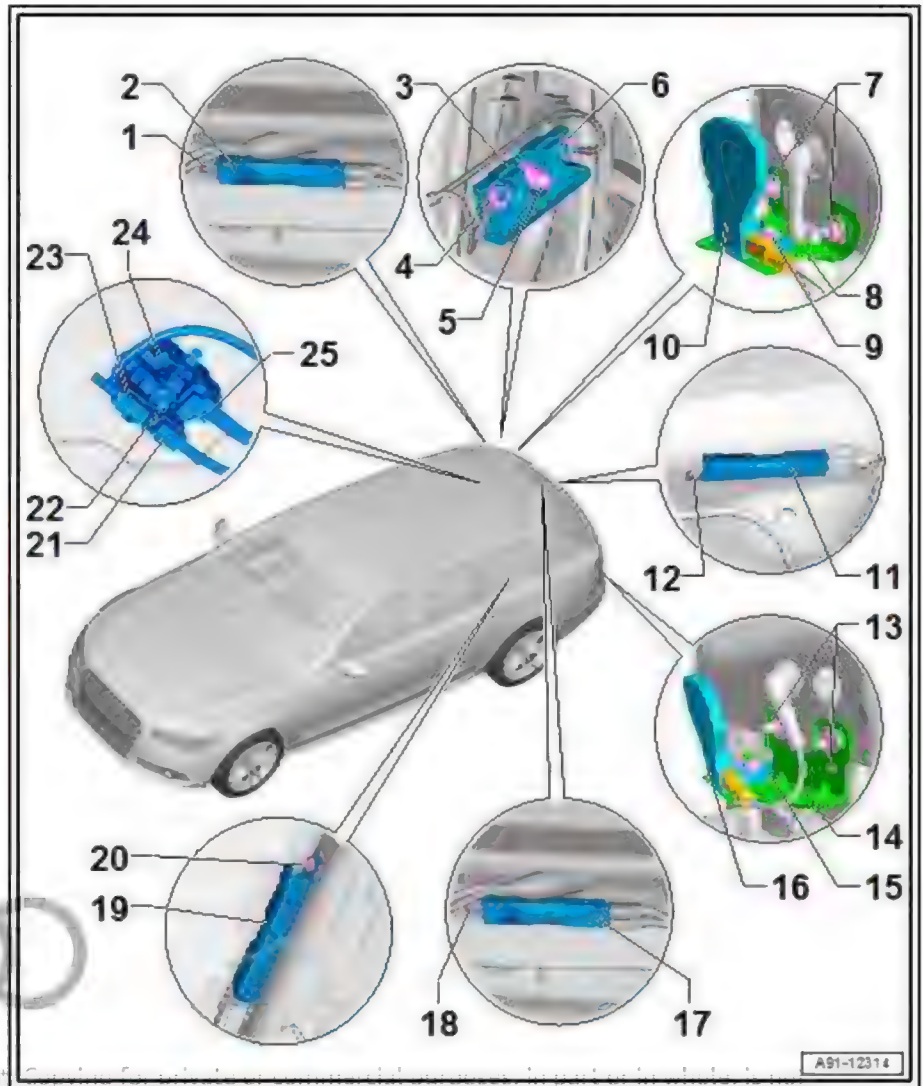
26 - GPS connection from GPS aerial - R50-



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3.2.5 Overview of fitting locations - aerial systems, Avant, USA

- 1 - Bolt
 - ☐ 2 Nm
- 2 - Aerial amplifier 4 - R113-
 - ☐ Pin assignment [⇒ page 126](#)
 - ☐ Removing and installing [⇒ page 114](#)
- 3 - Window aerial suppression filter - C18-
 - ☐ Removing and installing [⇒ page 117](#)
- 4 - Nut
 - ☐ 9 Nm
- 5 - Nut
 - ☐ 9 Nm
- 6 - Nut
 - ☐ 9 Nm
- 7 - Nut
 - ☐ 2x
 - ☐ 4 Nm
- 8 - Bracket
- 9 - Nut
 - ☐ 4 Nm
- 10 - LTE aerial 2 - R306-
 - ☐ Removing and installing [⇒ page 121](#)
- 11 - Aerial amplifier - R24-
 - ☐ Pin assignment [⇒ page 124](#)
 - ☐ Removing and installing [⇒ page 112](#)
- 12 - Bolt
 - ☐ 2 Nm
- 13 - Nut
 - ☐ 2x
 - ☐ 4 Nm
- 14 - Bracket
- 15 - Nut
 - ☐ 4 Nm
- 16 - LTE aerial 1 - R297-
 - ☐ Removing and installing [⇒ page 121](#)
- 17 - Aerial amplifier 2 - R111-
 - ☐ Pin assignment [⇒ page 123](#)
 - ☐ Removing and installing [⇒ page 113](#)
- 18 - Bolt
 - ☐ 2 Nm



19 - Aerial amplifier 3 - R112-

- ☐ Pin assignment ⇒ [page 125](#)
- ☐ Removing and installing ⇒ [page 115](#)

20 - Bolt

- ☐ 2 Nm

21 - GSM connection from telephone aerial - R65-

22 - Bolt

- ☐ 6 Nm

23 - SAT connection from satellite aerial - R170-

24 - Roof aerial - R216-

- ☐ Pin assignment ⇒ [page 126](#)
- ☐ Removing and installing ⇒ [page 120](#)

25 - GPS connection from GPS aerial - R50-

3.2.6 Overview of fitting locations - aerial systems, Avant, Russia

1 - Bolt

- ☐ 2 Nm

2 - Aerial amplifier 4 - R113-

- ☐ Pin assignment ⇒ [page 126](#)
- ☐ Removing and installing ⇒ [page 114](#)

3 - Nut

- ☐ 9 Nm

4 - Nut

- ☐ 9 Nm

5 - Window aerial suppression filter - C18-

- ☐ Removing and installing ⇒ [page 117](#)

6 - Nut

- ☐ 9 Nm

7 - Nut

- ☐ 2x
- ☐ 4 Nm

8 - Bracket

9 - Nut

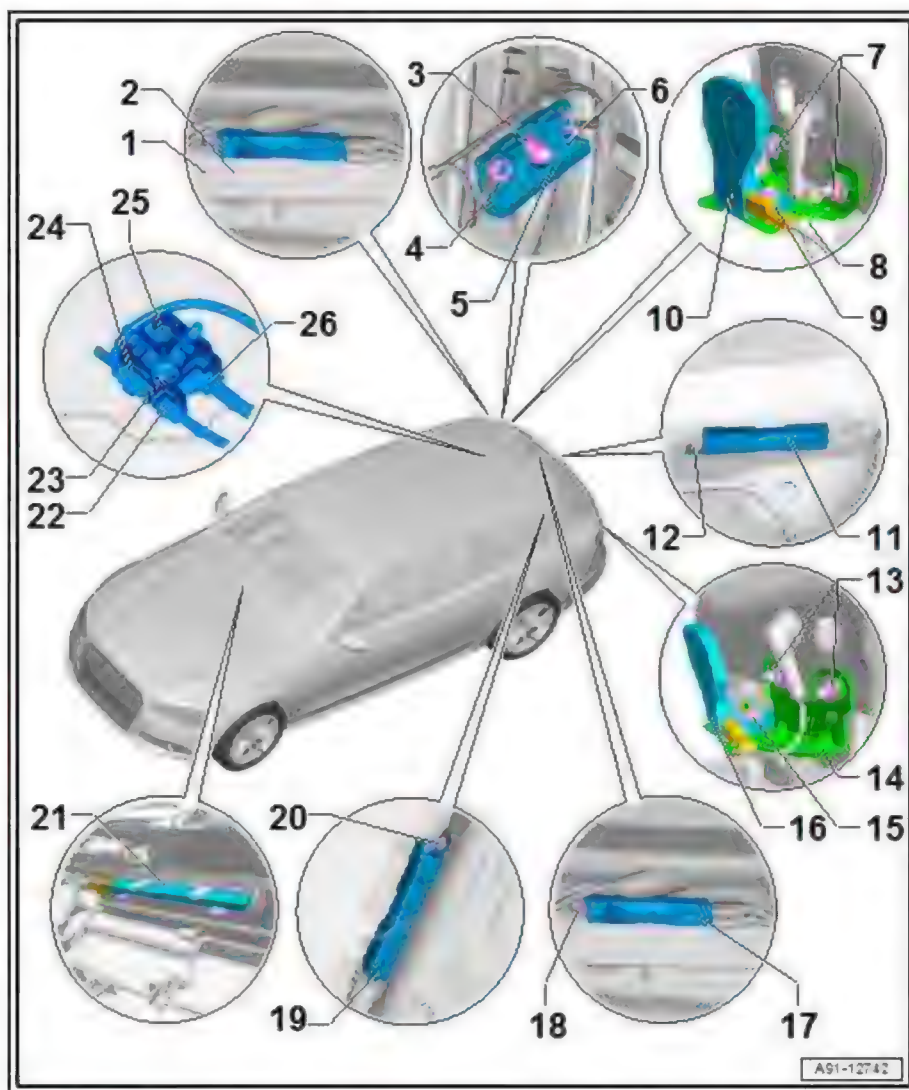
- ☐ 4 Nm

10 - LTE aerial 2 - R306-

- ☐ Removing and installing ⇒ [page 121](#)

11 - Aerial amplifier - R24-

- ☐ Pin assignment ⇒ [page 124](#)
- ☐ Removing and installing ⇒ [page 124](#)





12 - Bolt

- ☐ 2 Nm

13 - Nut

- ☐ 2x

- ☐ 4 Nm

14 - Bracket

15 - Nut

- ☐ 4 Nm

16 - Telephone aerial - R65-

- ☐ Removing and installing ⇒ [page 121](#)

17 - Aerial amplifier 2 - R111-

- ☐ Pin assignment ⇒ [page 123](#)
- ☐ Removing and installing ⇒ [page 113](#)

18 - Bolt

- ☐ 2 Nm

19 - Aerial amplifier 3 - R112-

- ☐ Pin assignment ⇒ [page 125](#)
- ☐ Removing and installing ⇒ [page 115](#)

20 - Bolt

- ☐ 2 Nm

21 - Emergency call module aerial - R263-

- ☐ Removing and installing ⇒ [page 120](#)

22 - LTE connection from LTE aerial 1 - R297-

23 - Bolt

- ☐ 6 Nm

24 - RC connection from auxiliary heater aerial - R182-

25 - Roof aerial - R216-

- ☐ Pin assignment ⇒ [page 126](#)
- ☐ Removing and installing ⇒ [page 120](#)

26 - GPS connection from GPS aerial - R50-

3.3 Removing and installing aerial amplifiers

⇒ ["3.3.1 Removing and installing aerial amplifiers R111 / R112 - Saloon", page 110](#)

⇒ ["3.3.2 Removing and installing aerial amplifiers R24 / R113 - Saloon", page 111](#)

⇒ ["3.3.3 Removing and installing aerial amplifier R24 - Avant", page 112](#)

⇒ ["3.3.4 Removing and installing aerial amplifier 2 R111 - Avant", page 113](#)

⇒ ["3.3.5 Removing and installing aerial amplifier 4 R113 - Avant", page 114](#)

⇒ ["3.3.6 Removing and installing aerial amplifier 3 R112 - Avant", page 115](#)

3.3.1 Removing and installing aerial amplifiers -R111- / -R112- - Saloon

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



Aerial amplifier 2 - R111- / aerial amplifier 3 - R112- are located on D-pillar (top).

The removal and installation procedure is similar for all components.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove D-pillar trim ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing D-pillar trim .



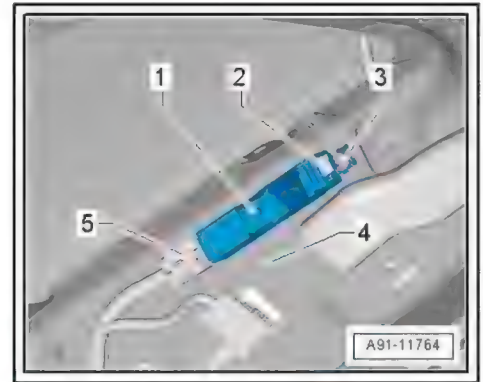
- Release and unplug connectors -2- and -5- at aerial amplifier 2 - R111- -1-.
- Unscrew bolt -3- and remove aerial amplifier 2 - R111- -1- from D-pillar -4-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["3.2.1 Overview of fitting locations - aerial systems, Saloon, Europe and rest-of-world vehicles", page 100](#)
- ◆ ⇒ ["3.2.2 Overview of fitting locations - aerial systems, Saloon, USA", page 102](#)
- ◆ ⇒ ["3.2.3 Overview of fitting locations - aerial systems, Saloon, Russia", page 103](#)



3.3.2 Removing and installing aerial amplifiers -R24- / -R113- - Saloon

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



Aerial amplifier - R24- / aerial amplifier 4 - R113- are located on D-pillar (bottom).

The removal and installation procedure is similar for all components.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove D-pillar trim ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing D-pillar trim .

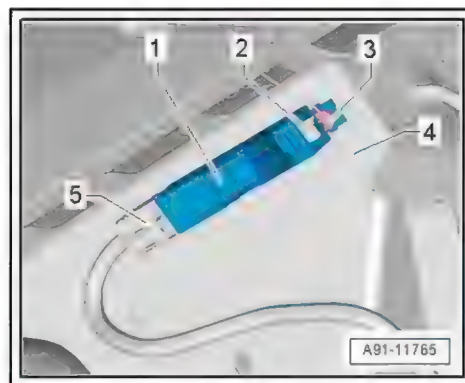
- Release and unplug connectors -2- and -5- at aerial amplifier - R24- -1-.
- Unscrew bolt -3- and remove aerial amplifier - R24- -1- from D-pillar -4-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["3.2.1 Overview of fitting locations - aerial systems, Saloon, Europe and rest-of-world vehicles", page 100](#)
- ◆ ⇒ ["3.2.2 Overview of fitting locations - aerial systems, Saloon, USA", page 102](#)
- ◆ ⇒ ["3.2.3 Overview of fitting locations - aerial systems, Saloon, Russia", page 103](#)



3.3.3 Removing and installing aerial amplifier - R24- - Avant

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



The aerial amplifier - R24- is located on the rear lid (bottom left).

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear lid trim (bottom) ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing rear lid trim (bottom) .



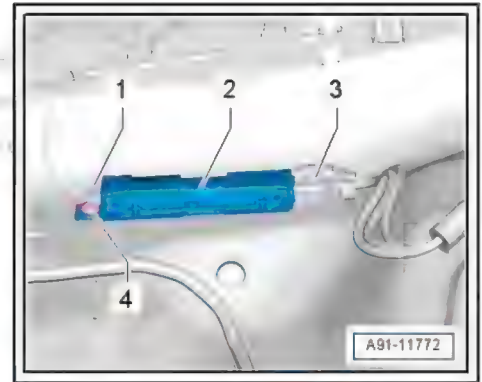
- Release and unplug connectors -1- and -3- at aerial amplifier - R24- -2-.
- Unscrew bolt -4- and remove aerial amplifier - R24- -2- from rear lid.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["3.2.4 Overview of fitting locations - aerial systems, Avant, Europe and rest-of-world vehicles", page 105](#)
- ◆ ⇒ ["3.2.5 Overview of fitting locations - aerial systems, Avant, USA", page 107](#)
- ◆ ⇒ ["3.2.6 Overview of fitting locations - aerial systems, Avant, Russia", page 108](#)



3.3.4 Removing and installing aerial amplifier 2 - R111- - Avant

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



The aerial amplifier 2 - R111- is located on the rear lid (top left).

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear lid trim (bottom) ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing rear lid trim (bottom) .

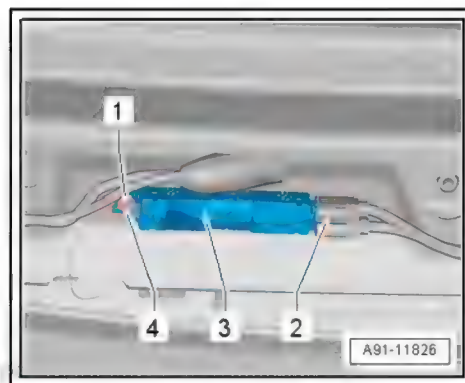
- Release and unplug connectors -2- and -4- at aerial amplifier 2 - R111- -3-.
- Unscrew bolt -1- and remove aerial amplifier 2 - R111- -3- from rear lid.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ [“3.2.4 Overview of fitting locations - aerial systems, Avant, Europe and rest-of-world vehicles”, page 105](#)
- ◆ ⇒ [“3.2.5 Overview of fitting locations - aerial systems, Avant, USA”, page 107](#)
- ◆ ⇒ [“3.2.6 Overview of fitting locations - aerial systems, Avant, Russia”, page 108](#)



3.3.5 Removing and installing aerial amplifier 4 - R113- - Avant

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



The aerial amplifier 4 - R113- is located on the rear lid (top right).

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear lid trim (top) ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing rear lid trim (top) .



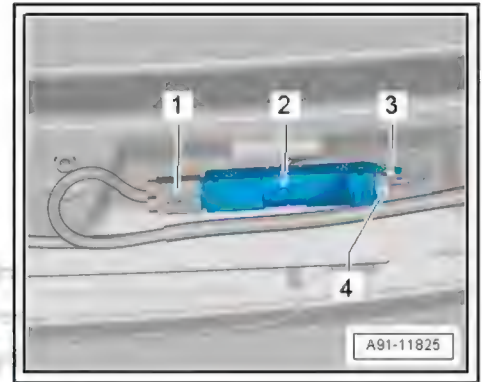
- Release and unplug connectors -1- and -4- at aerial amplifier 4 - R113- -2-.
- Unscrew bolt -3- and remove aerial amplifier 4 - R113- -2- from rear lid.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["3.2.4 Overview of fitting locations - aerial systems, Avant, Europe and rest-of-world vehicles", page 105](#)
- ◆ ⇒ ["3.2.5 Overview of fitting locations - aerial systems, Avant, USA", page 107](#)
- ◆ ⇒ ["3.2.6 Overview of fitting locations - aerial systems, Avant, Russia", page 108](#)



3.3.6 Removing and installing aerial amplifier 3 - R112- - Avant

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



Aerial amplifier 3 - R112- is located on C-pillar (left-side).

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove C-pillar trim ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing C-pillar trim .

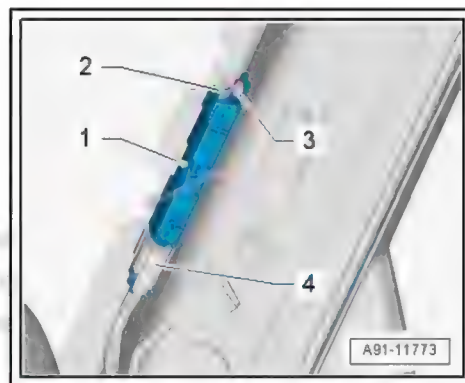
- Release and unplug connectors -2- and -4- at aerial amplifier 3 - R112- -1-.
- Unscrew bolt -3- and remove aerial amplifier 3 - R112- -1- from C-pillar.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ [“3.2.4 Overview of fitting locations - aerial systems, Avant, Europe and rest-of-world vehicles”, page 105](#)
- ◆ ⇒ [“3.2.5 Overview of fitting locations - aerial systems, Avant, USA”, page 107](#)
- ◆ ⇒ [“3.2.6 Overview of fitting locations - aerial systems, Avant, Russia”, page 108](#)



3.4 Removing and installing window aerial suppression filter - C18-

⇒ [“3.4.1 Removing and installing window aerial suppression filter C18 - Saloon”, page 116](#)

⇒ [“3.4.2 Removing and installing window aerial suppression filter C18 - Avant”, page 117](#)

3.4.1 Removing and installing window aerial suppression filter - C18- - Saloon

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



Window aerial suppression filter - C18- is located behind D-pillar trim (right-side).

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove D-pillar trim ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing D-pillar trim .



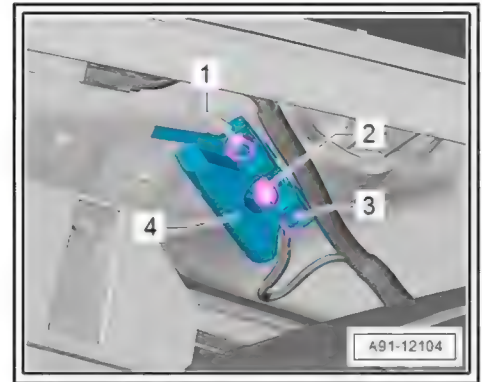
- Unscrew nuts -1- and -3- on window aerial suppression filter - C18- -4-.
- Disconnect wires on window aerial suppression filter - C18- -1-.
- Unscrew nut -2- and remove window aerial suppression filter - C18- -1- from D-pillar.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["3.2.1 Overview of fitting locations - aerial systems, Saloon, Europe and rest-of-world vehicles", page 100](#)
- ◆ ⇒ ["3.2.2 Overview of fitting locations - aerial systems, Saloon, USA", page 102](#)
- ◆ ⇒ ["3.2.3 Overview of fitting locations - aerial systems, Saloon, Russia", page 103](#)



3.4.2 Removing and installing window aerial suppression filter - C18- - Avant

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



Window aerial suppression filter - C18- is located behind rear lid trim (right-side).

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Open cover in luggage compartment side trim (right-side).

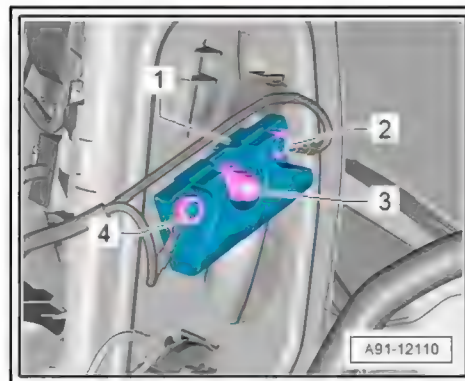
- Unscrew nuts -2- and -4- on window aerial suppression filter - C18- -1-.
- Disconnect wires on window aerial suppression filter - C18- -1-.
- Unscrew nut -3- and remove window aerial suppression filter - C18- -1- from rear lid.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ [“3.2.4 Overview of fitting locations - aerial systems, Avant, Europe and rest-of-world vehicles”, page 105](#)
- ◆ ⇒ [“3.2.5 Overview of fitting locations - aerial systems, Avant, USA”, page 107](#)
- ◆ ⇒ [“3.2.6 Overview of fitting locations - aerial systems, Avant, Russia”, page 108](#)



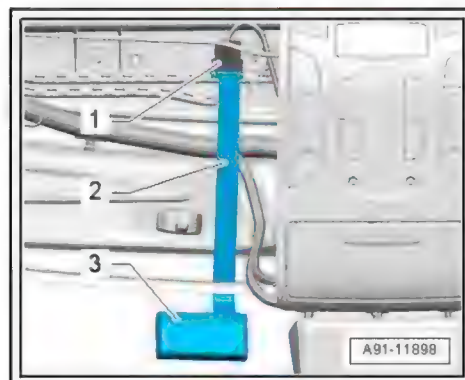
3.5 Removing and installing traffic data aerial

Traffic data aerial - R173- is located on windscreen (top left).

Removing

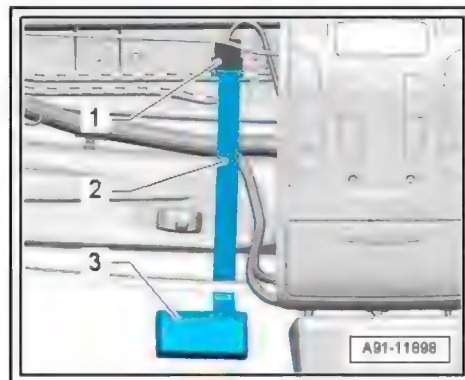
- Switch off ignition and all electrical equipment, and remove ignition key.

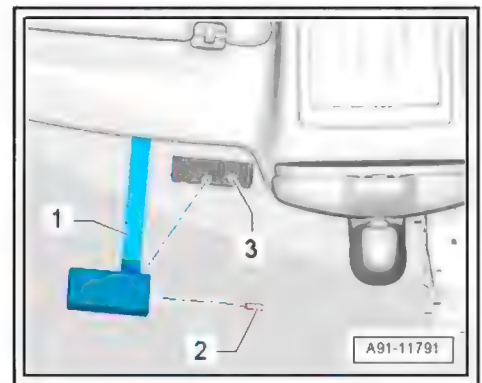
Electrical connectors -1- for traffic data aerial - R173- -3- are located behind the sun visor (left-side) on roof cross member. Ribbon cable -2- is routed at roof cross member; before disconnecting, moulded headliner must be removed.



- Remove moulded headliner ⇒ General body repairs, interior; Rep. gr. 70 ; Roof trim panels; Removing and installing moulded headliner .
- Release and unplug connector -1-.

Removing traffic data aerial - R173- :





- Install in reverse sequence of removal.



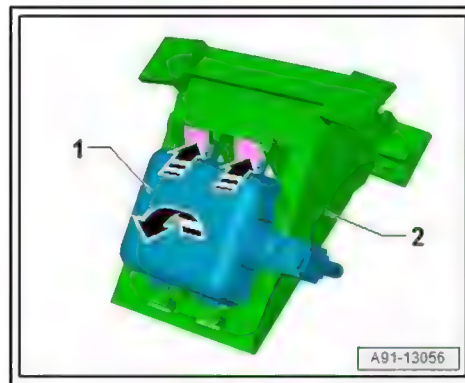
1

A91-13052

- Release and unplug connector at dedicated short-range communication aerial - R269- .
- Release the two tabs -arrows- and swivel dedicated short-range communication aerial - R269- -1- out of bracket in direction of -arrow-.
- Detach dedicated short-range communication aerial - R269- .

Installing

- Install in reverse sequence of removal.



3.7 Removing and installing emergency call module aerial

Emergency call module aerial - R263- is located in front centre of dash panel (IW1/IW3 only).

Removing

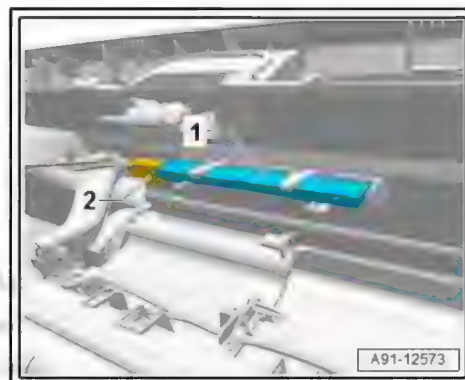
- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove dash panel ➔ General body repairs, interior; Rep. gr. 70 ; Dash panel; Exploded view - dash panel .
- Release and unplug connector -2-.
- Pull emergency call module aerial - R263- -1- out of mounting.

Installing

- Install in reverse sequence of removal.



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3.8 Removing and installing roof aerial

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



The roof aerial - R216- has a maximum of four connections.

Aerial wires are plugged in directly at base of roof aerial - R216- .

To remove roof aerial - R216- , remove/lower headliner at rear.



Removing

- Switch off ignition and all electrical equipment, and remove ignition key.

Saloon

- Fully remove moulded headliner and place on dash panel (front) ⇒ General body repairs, interior; Rep. gr. 70 ; Roof trim panels; Removing and installing moulded headliner .

Avant

- Lower moulded headliner at rear ⇒ General body repairs, interior; Rep. gr. 70 ; Roof trim; Removing and installing moulded headliner .

All vehicles

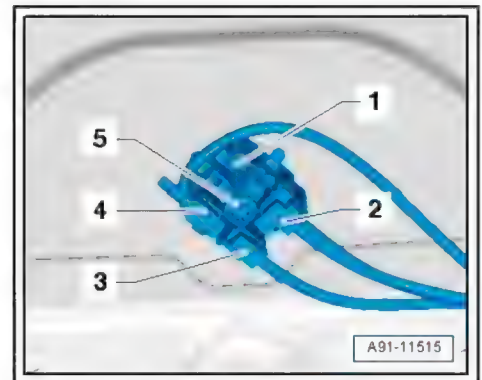
- Release and unplug connectors -2-, -3- and -4- to aerial wires.
- Unscrew bolt -5- and detach retaining spring.
- Lift roof aerial - R216- off roof.

Installing

- Installation is carried out in reverse sequence; note the following:

Roof aerial - R216- is supplied pre-assembled. Roof aerial - R216- , retaining spring and bolt are fitted.

- Fit roof aerial - R216- onto roof and press on until it engages.
- Tighten pre-assembled bolt to specified torque.



Tightening torques

- ◆ ⇒ [“3.2.1 Overview of fitting locations - aerial systems, Saloon, Europe and rest-of-world vehicles”, page 100](#)
- ◆ ⇒ [“3.2.2 Overview of fitting locations - aerial systems, Saloon, USA”, page 102](#)
- ◆ ⇒ [“3.2.3 Overview of fitting locations - aerial systems, Saloon, Russia”, page 103](#)
- ◆ ⇒ [“3.2.4 Overview of fitting locations - aerial systems, Avant, Europe and rest-of-world vehicles”, page 105](#)
- ◆ ⇒ [“3.2.5 Overview of fitting locations - aerial systems, Avant, USA”, page 107](#)
- ◆ ⇒ [“3.2.6 Overview of fitting locations - aerial systems, Avant, Russia”, page 108](#)

3.9 Removing and installing bumper aerials

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



LTE aerial 2 - R306- is located on right side beneath rear bumper cover on body.

On 9ZE/EL3, the bumper aerial (left-side) is the telephone aerial - R65- .

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (rear); Removing and installing bumper cover .

Telephone aerial - R65- under rear bumper cover (left-side)

- Release and unplug connector -5- for telephone aerial - R65- -1-.
- Unscrew nut -4- for telephone aerial - R65- -1-.
- Detach telephone aerial - R65- -1- from bracket -2-.
- Remove nuts -3- for bracket -2-.
- Detach bracket -2- from body.

LTE aerial 2 - R306- under rear bumper cover (right-side)

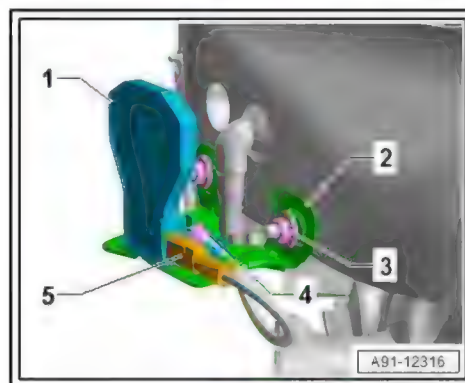
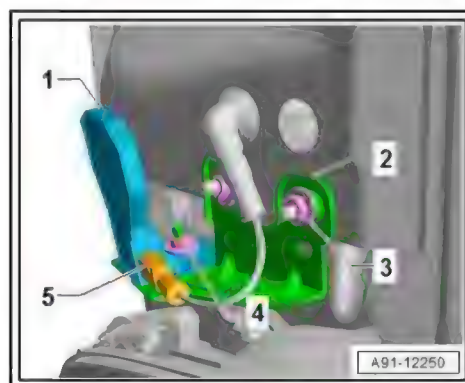
- Release and unplug connector -5- for LTE aerial 2 - R306- -1-.
- Unscrew nut -4- for LTE aerial 2 - R306- -1-.
- Detach LTE aerial 2 - R306- -1- from bracket -2-.
- Remove nuts -3- for bracket -2-.
- Detach bracket -2- from body.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ [“3.2.1 Overview of fitting locations - aerial systems, Saloon, Europe and rest-of-world vehicles”, page 100](#)
- ◆ ⇒ [“3.2.2 Overview of fitting locations - aerial systems, Saloon, USA”, page 102](#)
- ◆ ⇒ [“3.2.3 Overview of fitting locations - aerial systems, Saloon, Russia”, page 103](#)
- ◆ ⇒ [“3.2.4 Overview of fitting locations - aerial systems, Avant, Europe and rest-of-world vehicles”, page 105](#)
- ◆ ⇒ [“3.2.5 Overview of fitting locations - aerial systems, Avant, USA”, page 107](#)
- ◆ ⇒ [“3.2.6 Overview of fitting locations - aerial systems, Avant, Russia”, page 108](#)



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3.10 Pin assignment

Aerial amplifier 2 - R111- , Saloon/Avant

Up to model year 2013

- 1 - Radio aerial 2 - R93- (AM/FM1)/ central locking and anti-theft alarm system aerial - R47- (FZV, remote locking)
- 2 - Connection AM/FM1 to radio - R- / control unit 1 for information electronics - J794-
- 3 - Connection FZV (remote locking) to convenience system central control unit - J393-

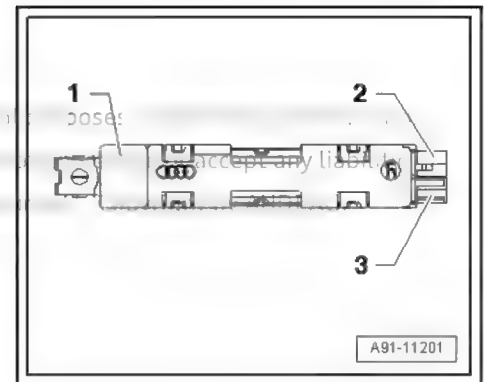
From model year 2014 onwards

1 - Radio aerial 2 - R93- (AM/FM1)/ central locking and anti-theft alarm system aerial - R47- (FZV, remote locking), Saloon

1 - Radio aerial 2 - R93- (AM/FM1), Avant

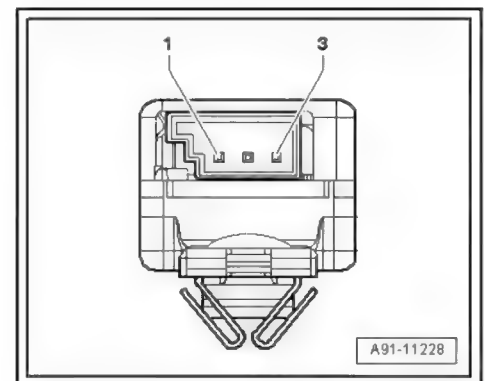
2 - Connection AM/FM1 to radio - R- / control unit 1 for information electronics - J794-

3 - Connection FZV (remote locking) to convenience system central control unit - J393- , Saloon only



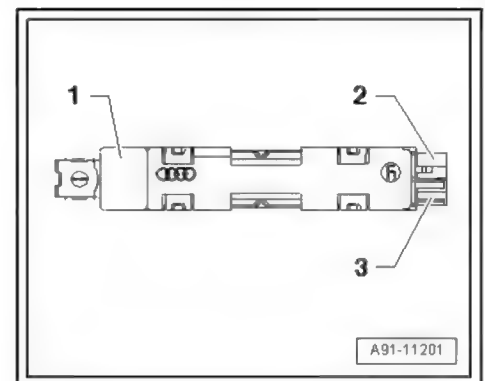
Window aerial connectors

- 1 - AM
- 2 - FM1/diagnosis
- 3 - FZV (remote locking), not on Avant models from model year 2014



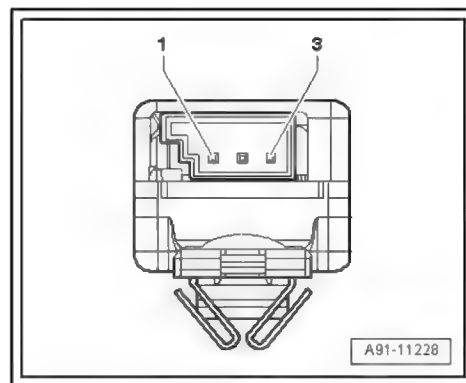
Aerial amplifier - R24- , Saloon

- 1 - Aerial - R11- (FM2)/ TV aerial 2 - R56- (TV2)
- 2 - Connection FM2 to radio - R- / control unit 1 for information electronics - J794-
- 3 - Connection TV2 to TV tuner - R78-



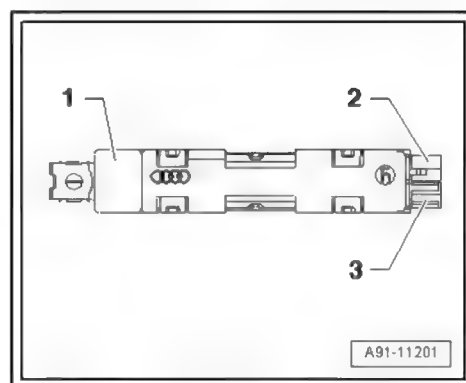
Window aerial connectors

- 1 - Not used
- 2 - FM2/TV2/diagnosis
- 3 - Not used



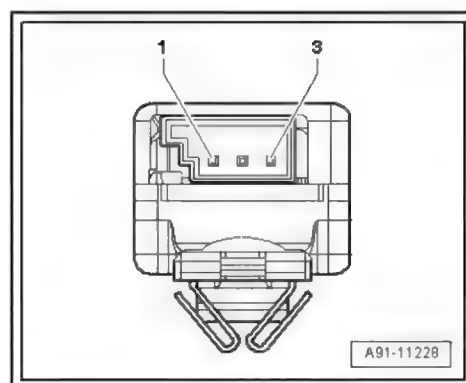
Aerial amplifier - R24- , Avant

- 1 - Aerial - R11- (FM2)/ TV aerial 1 - R55- (TV1)
- 2 - Connection FM2 to radio - R- / control unit 1 for information electronics - J794-
- 3 - Connection TV1 to TV tuner - R78-



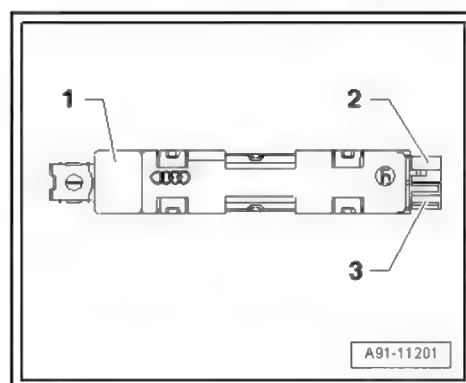
Window aerial connectors

- 1 - Not used
- 2 - FM2/TV1/diagnosis
- 3 - Not used



Aerial amplifier 3 - R112- , Saloon

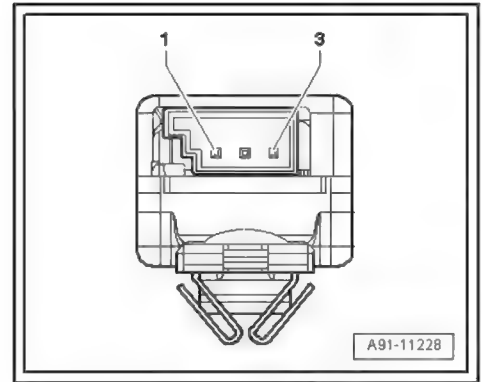
- 1 - Digital radio aerial - R183- (DAB)/ TV aerial 1 - R55- (TV1)
- 2 - Connection TV1 to TV tuner - R78-
- 3 - Connection DAB to radio - R- / control unit 1 for information electronics - J794-





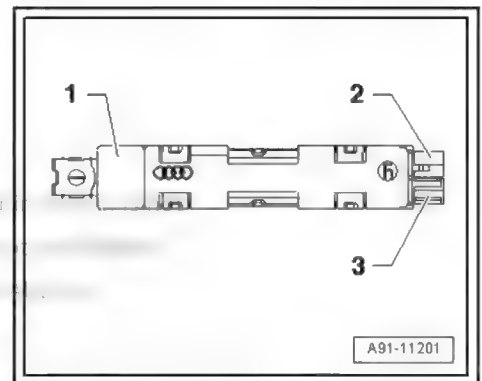
Window aerial connectors

- 1 - DAB
- 2 - TV1/diagnosis
- 3 - Not used



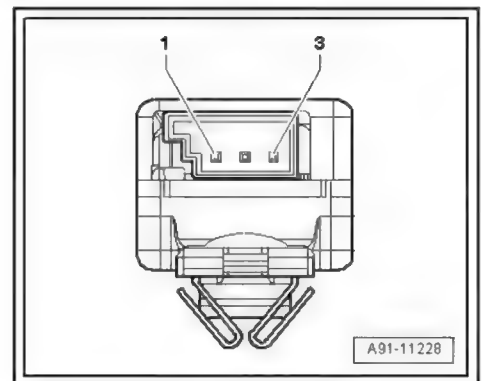
Aerial amplifier 3 - R112- , Avant

- 1 - Digital radio aerial - R183- (DAB)/ TV aerial 3 - R57- (TV3)
- 2 - Connection TV3 to TV tuner - R78-
- 3 - Connection DAB to radio - R- / control unit 1 for information electronics - J794-



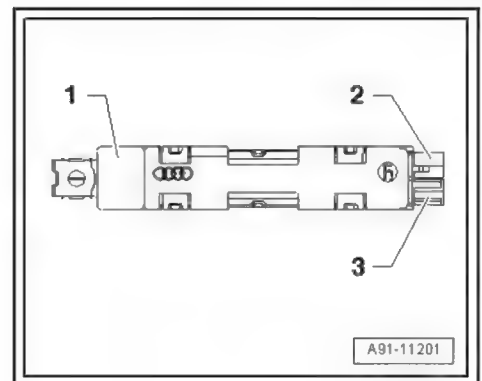
Window aerial connectors

- 1 - DAB
- 2 - TV3/diagnosis
- 3 - Not used



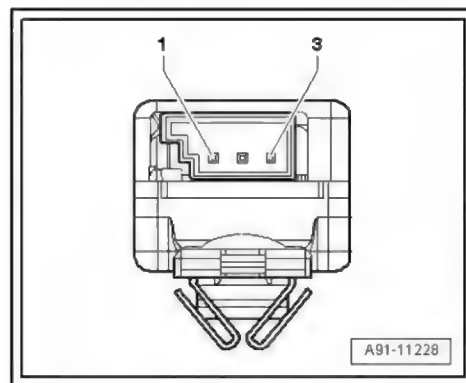
Aerial amplifier 4 - R113- , Saloon

- 1 - TV aerial 3 - R57- , TV3
- 2 - Connection TV3 to TV tuner - R78-
- 3 - Not used



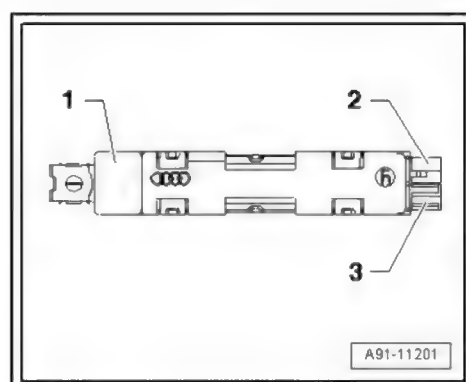
Window aerial connectors

- 1 - Not used
- 2 - TV3/diagnosis
- 3 - Not used



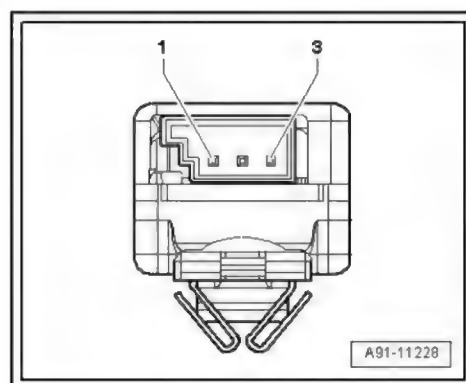
Aerial amplifier 4 - R113- , Avant

- 1 - TV aerial 2 - R56- , TV2
- 2 - Connection TV2 to TV tuner - R78-
- 3 - Not used



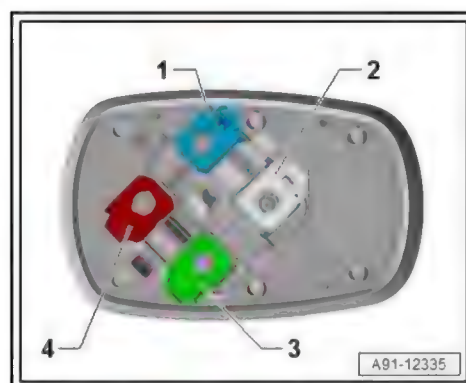
Window aerial connectors

- 1 - Not used
- 2 - TV2/diagnosis
- 3 - Not used



Roof aerial - R216-

- 1 - GPS aerial - R50- , blue
- 2 - Not used, white
- 3 - Satellite aerial - R170- / auxiliary heater aerial - R182- , green
- 4 - Telephone aerial - R65- / LTE aerial 1 - R297- , burgundy





4 Radio

⇒ ["4.1 Layout - radio", page 127](#)

⇒ ["4.2 Overview of fitting locations - radio", page 135](#)

⇒ ["4.3 Removing and installing radio", page 137](#)

⇒ ["4.4 Pin assignment", page 139](#)

4.1 Layout - radio

⇒ ["4.1.1 Layout - MMI radio, 8DN", page 127](#)

⇒ ["4.1.2 Layout - radio, MMI radio plus, 8DP", page 129](#)

⇒ ["4.1.3 Layout - radio system, MMI navigation system plus 8YQ/8AJ, up to model year 2014", page 131](#)

⇒ ["4.1.4 Layout - radio system, MMI navigation system plus I8H, from model year 2015 onwards", page 133](#)

4.1.1 Layout - MMI radio, 8DN

8DN - MMI radio, RMC radio basic

- ◆ Control unit 1 for information electronics - J794- in dash panel contains CD player
- ◆ Radio - R- integrated in control unit 1 for information electronics - J794-
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Multimedia system operating unit - E380- in centre console, QW1
- ◆ Sound systems: basic/standard, 8RX/9VD

Optional equipment

- ◆ CD changer - R41- in glove box, 7A2



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1 - Aerial - R11- / radio aerial 2
- R93- in rear window

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Control unit 1 for information electronics - J794- in dash panel

4 - Multimedia system operating unit - E380- in centre console

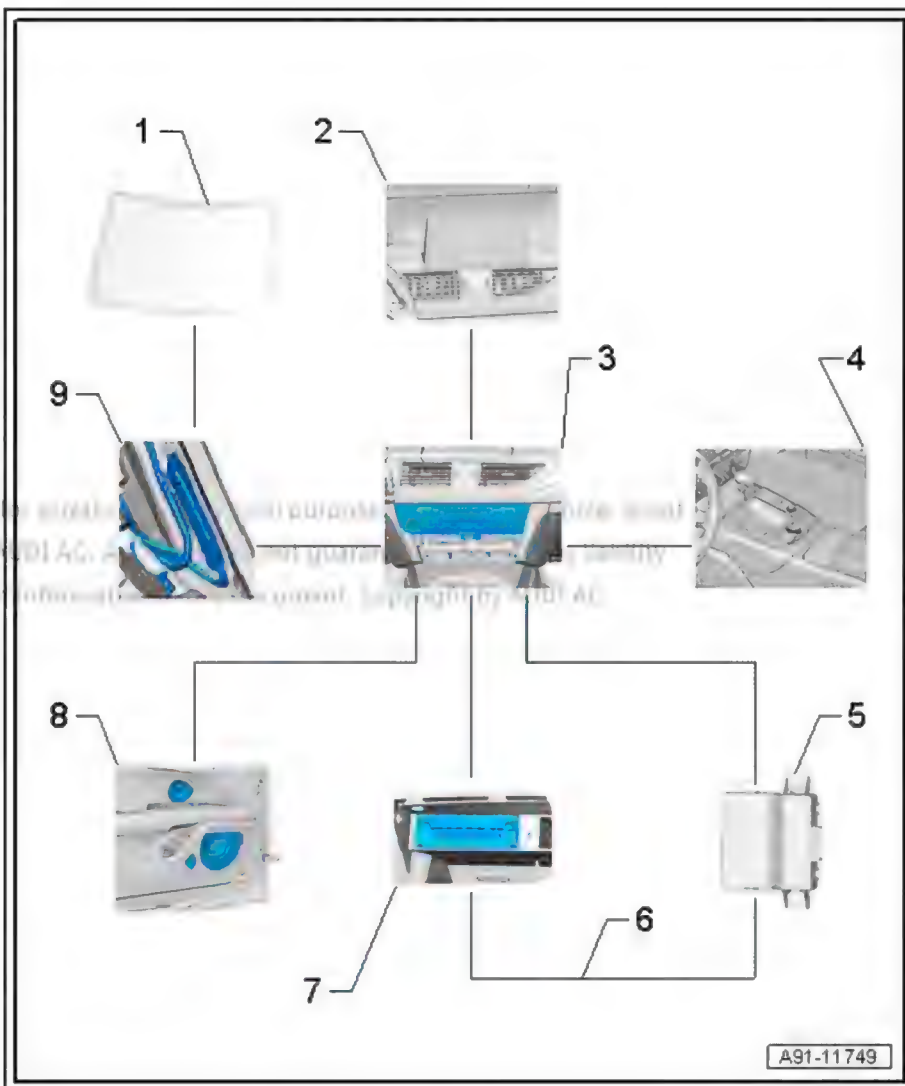
5 - Data bus diagnostic interface - J533- beneath rear seat bench

6 - MOST bus

7 - CD changer - R41- in glove box

8 - Sound systems

9 - Aerial amplifier



Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

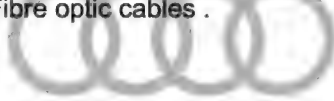
The end faces of the connectors must not become dirty.



If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



4.1.2 Layout - radio, MMI radio plus, 8DP

8DP - MMI radio plus, RMC radio plus

- ◆ Control unit 1 for information electronics - J794- in dash panel contains CD player / SD memory card readers
- ◆ Radio - R- integrated in control unit 1 for information electronics - J794-
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Multimedia system operating unit - E380- in centre console, QW1
- ◆ Connection for external audio sources - R199- , AUX-IN socket, in centre console storage box
- ◆ Sound system standard, 9VD

Optional equipment

- ◆ Digital radio - R147- integrated in control unit 1 for information electronics - J794- , Europe/rest-of-world and QV3 only
- ◆ Satellite radio - R146- integrated in control unit 1 for information electronics - J794- , USA and QV3 only
- ◆ CD changer - R41- in glove box, 7A2
- ◆ Connection for external audio sources - R199- in centre console storage compartment, UF7
- ◆ Sound system: BOSE, 8RY
- ◆ Digital sound package control unit - J525- in luggage compartment (rear left)
- ◆ Mobile phone pre-installation, 9ZF
- ◆ Bluetooth hands-free system, 9ZX
- ◆ Speech dialogue system, QH1

1 - Aerial - R11- / radio aerial 2 - R93- in rear window

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - Control unit 1 for information electronics - J794- in dash panel

5 - Connection for external audio sources - R199- in centre console storage compartment

6 - Data bus diagnostic interface - J533- beneath rear seat bench

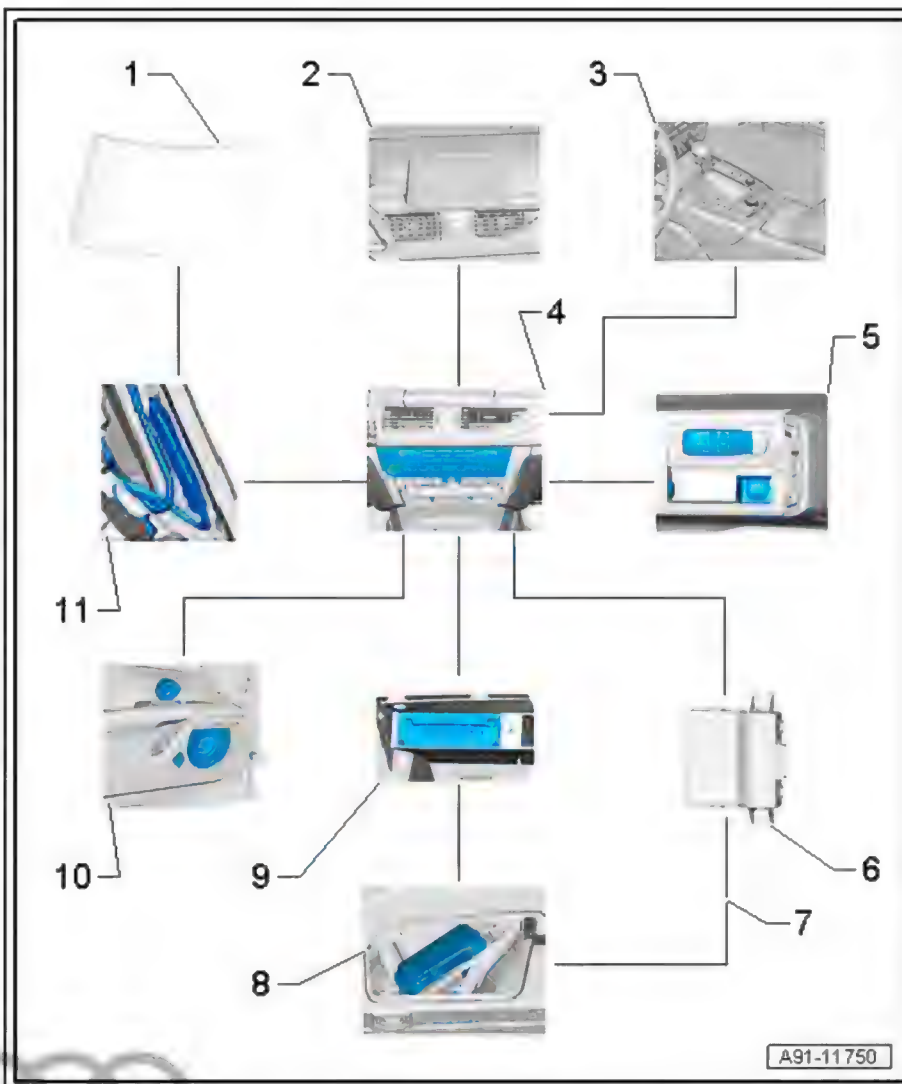
7 - MOST bus

8 - Digital sound package control unit - J525- in luggage compartment (rear left)

9 - CD changer - R41- in glove box

10 - Sound systems

11 - Aerial amplifier



Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.



If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



4.1.3 Layout - radio system, MMI navigation system plus 8YQ/8AJ, up to model year 2014

8YQ/8AJ - MMI radio high, navigation system plus

- ◆ Control unit 1 for information electronics - J794- with integrated CD player/DVD player/SD memory card readers/navigation system/HDD in dash panel
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Multimedia system operating unit - E380- in centre console, QW1
- ◆ DVD changer - R161- In glove box, 6G0
- ◆ Connection for external audio sources - R199- in centre console, UF7
- ◆ Digital sound package control unit - J525- in luggage compartment (rear left)
- ◆ Sound systems: standard/BOSE/Bang & Olufsen, 9VD/8RY/8RF
- ◆ Radio - R- in luggage compartment (rear left)

Optional equipment

- ◆ Digital radio - R147- integrated in radio - R- , Europe/rest-of-world and QV3 only
- ◆ Satellite radio - R146- integrated in radio - R- , USA and QV8 only
- ◆ TV tuner - R78- in luggage compartment (rear left), QU6/QU7
- ◆ Bluetooth hands-free system, 9ZX
- ◆ Bluetooth car phone, 9ZW
- ◆ Speech dialogue system, QH1

1 - Roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - Control unit 1 for information electronics - J794- in dash panel

5 - Connection for external audio sources - R199- in centre console storage compartment

6 - MOST bus

7 - Data bus diagnostic interface - J533- beneath rear seat bench

8 - Digital sound package control unit - J525- in luggage compartment (rear left)

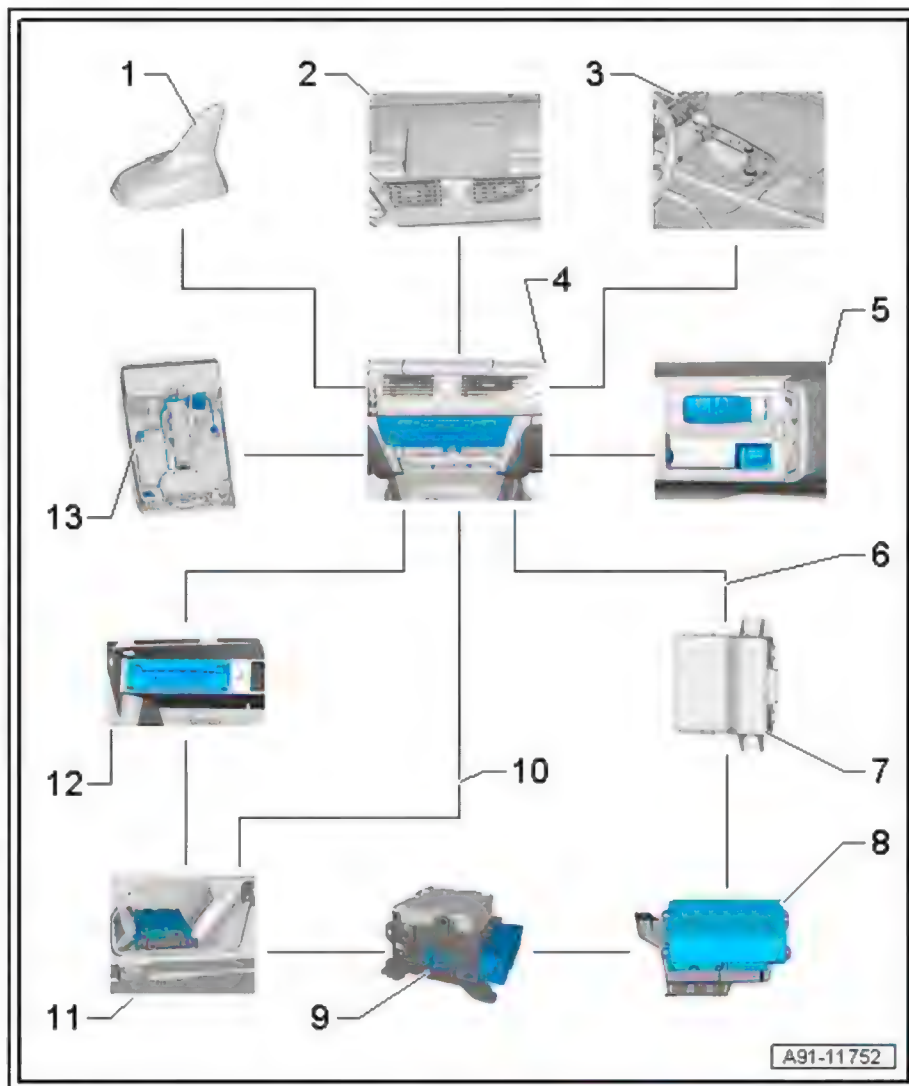
9 - Radio - R- in luggage compartment (rear left)

10 - FBAS wire

11 - TV tuner - R78- in luggage compartment (rear left)

12 - DVD changer - R161- in glove box

13 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-



The exchange of data in the MMI systems takes place via the MOST bus.

The connection to other data bus systems in the vehicle is handled by the data bus diagnostic interface - J533- .

Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.



If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



4.1.4 Layout - radio system, MMI navigation system plus I8H, from model year 2015 onwards

I8H - MMI radio high, MMI navigation system plus

- ◆ Control unit 1 for information electronics - J794- with integrated CD player/DVD player/SD memory card readers/navigation system/HDD in dash panel
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Multimedia system operating unit - E380- in centre console, QW1
- ◆ DVD changer - R161- in glove box, 6G2
- ◆ Connection for external audio sources - R199- in centre console storage compartment, U12
- ◆ Digital sound package control unit - J525- in luggage compartment (rear left)
- ◆ Sound systems: standard/BOSE/Bang & Olufsen, 9VD/8RY/8RF
- ◆ Radio - R- integrated in control unit 1 for information electronics - J794-
- ◆ Video input for reversing camera system, KA2

Optional equipment

- ◆ TV tuner - R78- in luggage compartment (rear left), QU1/QV1
- ◆ Bluetooth hands-free system, 9ZX
- ◆ Audi connect with Bluetooth car phone, 9ZK
- ◆ Audi phone box and Audi connect, 9ZC
- ◆ Audi phone box, 9ZE
- ◆ Digital radio - R147- integrated in control unit 1 for information electronics - J794- , Europe/rest-of-world and QV3 only
- ◆ Satellite radio - R146- integrated in control unit 1 for information electronics - J794- , USA and QV8 only
- ◆ Speech dialogue system, QH1

1 - Roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - Telephone bracket - R126- / connection for external audio sources - R199- in centre console storage compartment

5 - Control unit 1 for information electronics - J794- in dash panel

6 - MOST bus

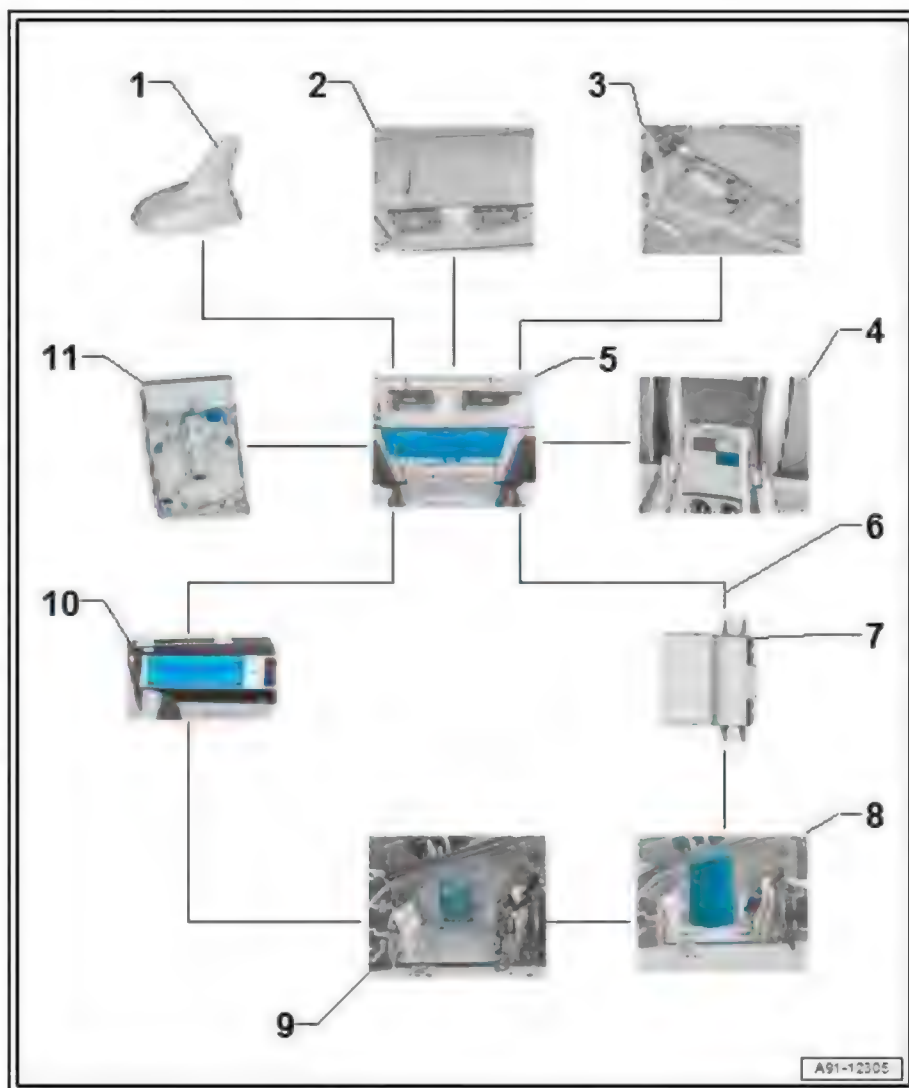
7 - Data bus diagnostic interface - J533- beneath rear seat bench

8 - Digital sound package control unit - J525- in luggage compartment (rear left)

9 - TV tuner - R78- in luggage compartment (rear left)

10 - DVD changer - R161- in glove box

11 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-



The exchange of data in the MMI systems takes place via the MOST bus.

The connection to other data bus systems in the vehicle is handled by the data bus diagnostic interface - J533- .

Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.



If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ➤ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



4.2 Overview of fitting locations - radio

➤ "4.2.1 Overview of fitting locations - radio RMC, 8DN, 8DP",
page 135

➤ "4.2.2 Overview of fitting locations - MMI radio, 8YQ, 8AJ, I8H",
page 136

4.2.1 Overview of fitting locations - radio RMC, 8DN, 8DP

1 - Control unit 1 for information electronics - J794-

- ☐ Pin assignment for radio RMC, 8DN ➤ page 139
- ☐ Pin assignment for radio RMC plus, 8DP ➤ page 135
- ☐ Removing and installing ➤ page 18

2 - Bolt

- ☐ 3 Nm

3 - Trim

4 - Bolt

- ☐ 4x
- ☐ 1 Nm

5 - Control unit 1 for information electronics - J794-

6 - Multimedia system operating unit - E380-

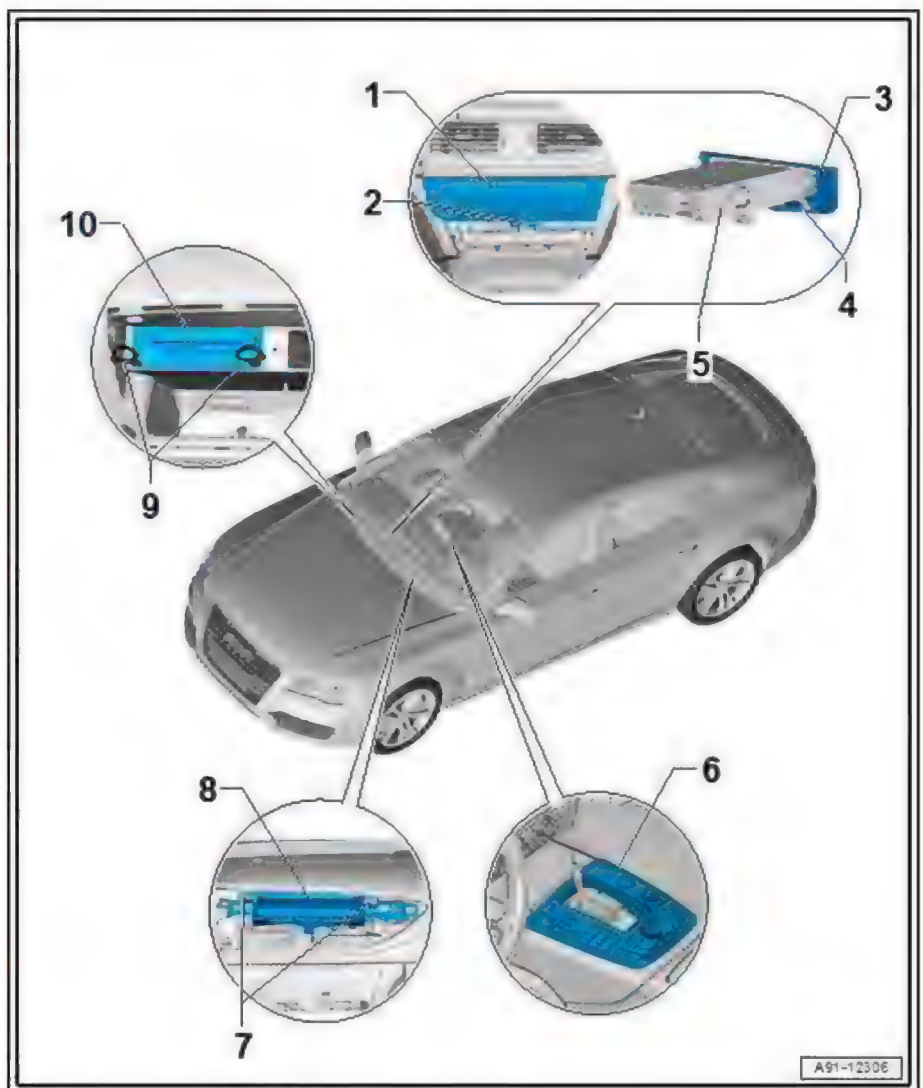
- ☐ Pin assignment ➤ page 34
- ☐ Removing and installing ➤ page 21

7 - Bolt

- ☐ 2x
- ☐ 3 Nm

8 - Display unit for front information display and operating unit control unit - J685-

- ☐ Pin assignment ➤ page 25
- ☐ Removing and installing ➤ page 10



9 - Radio release tool - T10057-

10 - CD changer - R41-

- ☐ Pin assignment ⇒ [page 149](#)
- ☐ Removing and installing ⇒ [page 151](#)

4.2.2 Overview of fitting locations - MMI radio, 8YQ, 8AJ, I8H

1 - Control unit 1 for information electronics - J794- , I8H

- ☐ Pin assignment ⇒ [page 148](#)
- ☐ Pin assignment for navigation system plus, Japan ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ☐ Removing and installing ⇒ [page 18](#)

2 - Bolt

- ☐ 3 Nm

3 - Trim

4 - Bolt

- ☐ 4x
- ☐ 1 Nm

5 - Control unit 1 for information electronics - J794-

6 - Radio - R- , 8YQ/8AJ

- ☐ Pin assignment ⇒ [page 146](#)
- ☐ Removing and installing ⇒ [page 137](#)

7 - Rack

8 - Rack

9 - Nut

- ☐ 2x
- ☐ 4 Nm

10 - Nut

- ☐ 4 Nm

11 - Multimedia system operating unit - E380-

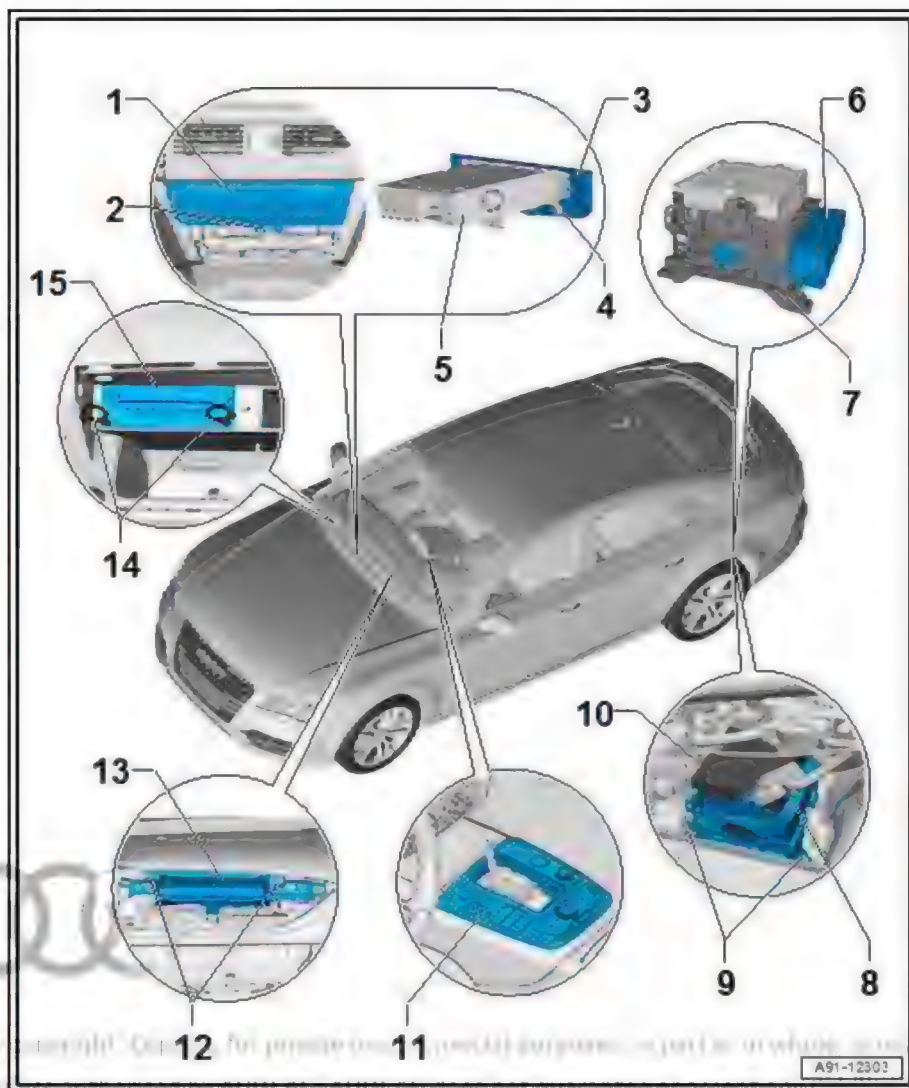
- ☐ Pin assignment ⇒ [page 34](#)
- ☐ Removing and installing ⇒ [page 21](#)
- ☐ With touchpad control unit - J929-
- ☐ Renewing touchpad control unit - J929- ⇒ [page 24](#)

12 - Bolt

- ☐ 2x
- ☐ 3 Nm

13 - Display unit for front information display and operating unit control unit - J685-

- ☐ Pin assignment ⇒ [page 25](#)





- ❑ Removing and installing ➔ [page 10](#)

14 - Radio release tool - T10057-

15 - DVD changer - R161- / CD changer - R41-

- ❑ Pin assignment ➔ [page 149](#)
- ❑ Removing and installing, DVD ➔ [page 152](#)
- ❑ Removing and installing, CD ➔ [page 151](#)

4.3 Removing and installing radio

➔ ["4.3.1 Removing and installing radio R , RMC, 8DN, 8DP", page 137](#)

➔ ["4.3.2 Removing and installing radio R , MMI, 8YQ/8AJ, up to model year 2014", page 137](#)

➔ ["4.3.3 Removing and installing radio R , MMI, I8H, from model year 2015 onwards", page 139](#)

4.3.1 Removing and installing radio - R- , RMC, 8DN, 8DP

Radio - R- is integrated in control unit 1 for information electronics - J794- ➔ [page 18](#) .

4.3.2 Removing and installing radio - R- , MMI, 8YQ/8AJ, up to model year 2014

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



- ◆ Protective cap for cable connector - VAS 6223/9-



Radio - R- -1- is located behind luggage compartment trim (left-side) in rack (bottom).



Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ➔ Vehicle diagnostic tester.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.

- Open left storage compartment in luggage compartment.

Radio - R- is located in rack beneath sound amplifiers. To remove radio - R- , the rack must first be removed.

First remove bracket with sound amplifiers in order to remove rack.

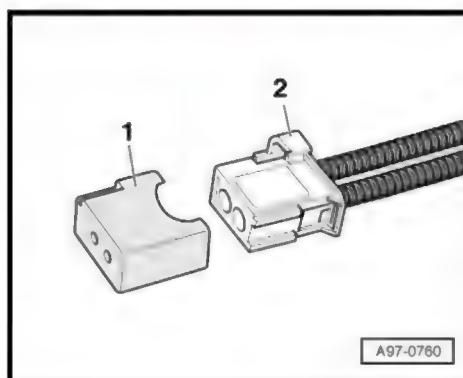
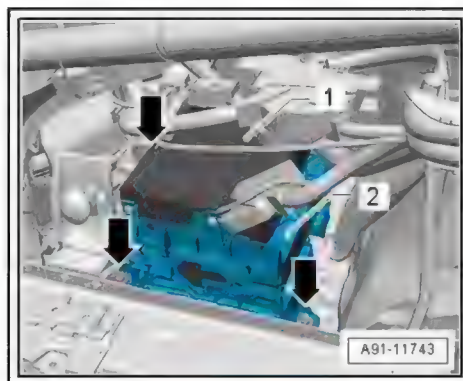
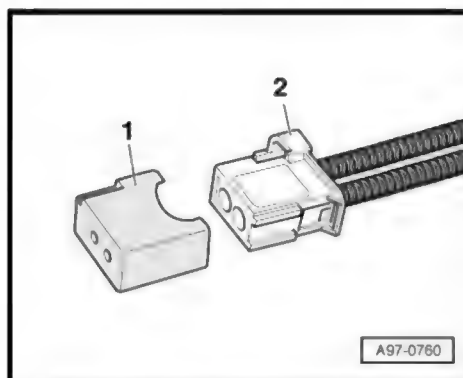
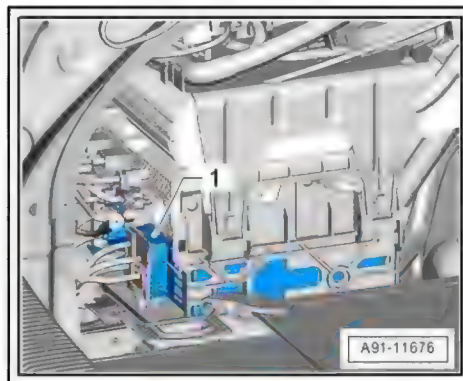
- Release and unplug connectors on control units.
- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.
- Remove bracket with sound amplifiers.
- ♦ BOSE ➔ [page 60](#)
- ♦ Bang & Olufsen ➔ [page 64](#)

- Remove nuts -arrows- from rack.
- Release and unplug connectors on radio - R- and TV tuner - R78- -1-.

- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.

The wiring harness is secured to the bottom of the rack and to the floor.

- Lift rack out of storage compartment until radio - R- can be pulled out of rack.





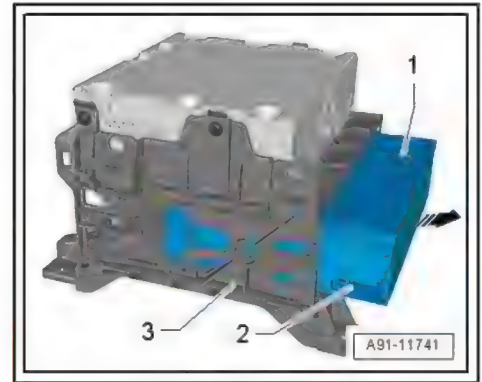
- Press lugs -2- (left and right) on radio - R- -1- and pull radio - R- -1- out of rack -3-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ [“4.2.2 Overview of fitting locations - MMI radio, 8YQ, 8AJ, I8H”, page 136](#)



4.3.3 Removing and installing radio - R- , MMI, I8H, from model year 2015 onwards

Radio - R- is integrated in control unit 1 for information electronics - J794- ⇒ [page 18](#) .

4.4 Pin assignment

⇒ [“4.4.1 Pin assignment for radio R , RMC, 8DN”, page 139](#)

⇒ [“4.4.2 Pin assignment for radio R , RMC plus, 8DP”, page 142](#)

⇒ [“4.4.3 Pin assignment for radio R , MMI, 8YQ/8AJ”, page 146](#)

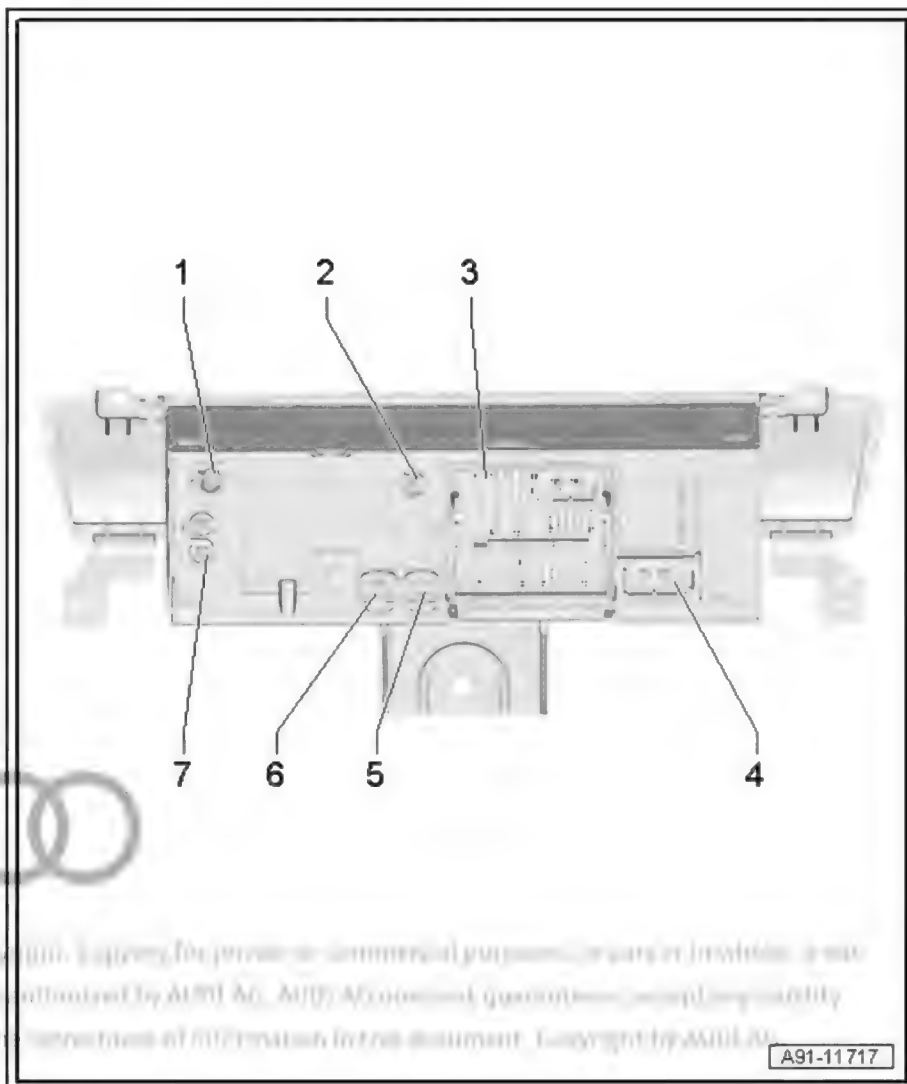
⇒ [“4.4.4 Pin assignment for radio R , MMI, I8H”, page 148](#)

4.4.1 Pin assignment for radio - R- , RMC, 8DN



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- 1 - Not used
- 2 - Not used
- 3 - Connection block with four multi-pin connectors
- 4 - MOST bus
- 5 - Not used
- 6 - 4-pin connector - T4df- to display unit for front information display and operating unit control unit - J685-
- 7 - Aerial connection, AM/FM/FM2



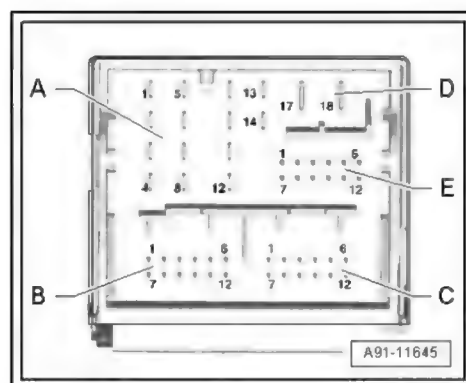
Note

Contacts which are not listed are not used.

- 3 - Connection block with four multi-pin connectors

- A - 8-pin connector - T8e-

- 1 - Loudspeaker (+), rear right
- 2 - Loudspeaker (+), front right
- 3 - Loudspeaker (+), front left
- 4 - Loudspeaker (+), rear left
- 5 - Loudspeaker (-), rear right
- 6 - Loudspeaker (-), front right
- 7 - Loudspeaker (-), front left
- 8 - Loudspeaker (-), rear left





B - 12-pin connector - T12c-

- 1 - Data from multimedia system operating unit - E380-
- 2 - RES BT multimedia system operating unit - E380-
- 7 - Data to multimedia system operating unit - E380-
- 8 - Wake-up multimedia system operating unit - E380-
- 9 - Res HU to multimedia system operating unit - E380-

C - 12-pin connector - T12-

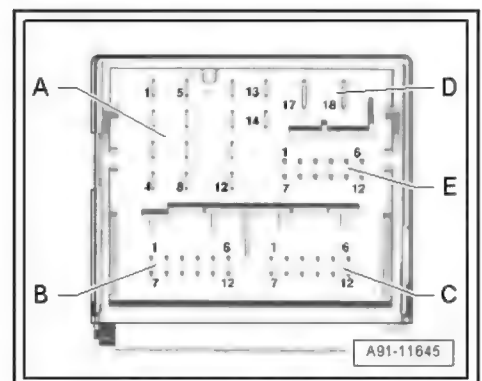
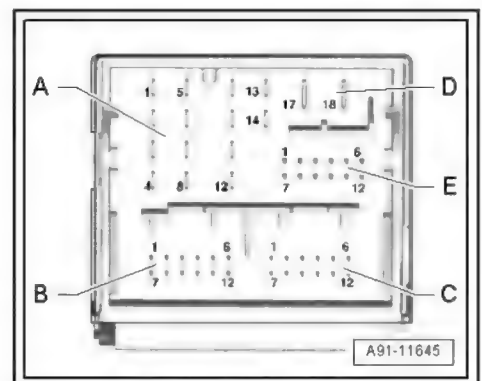
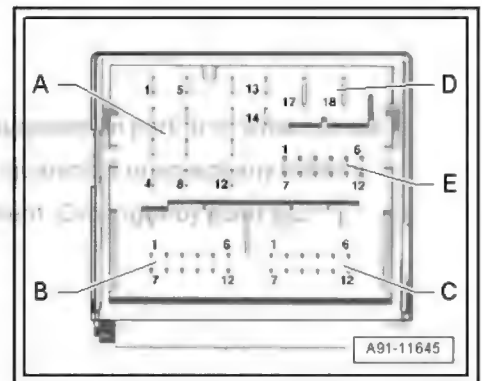
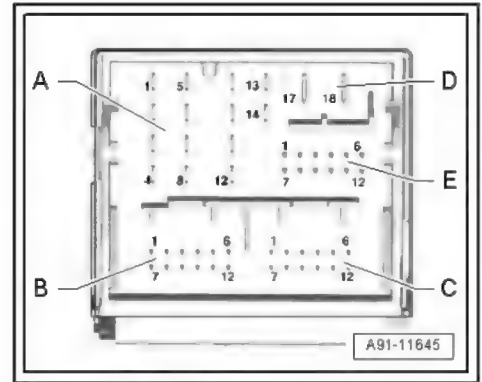
Not used

D - 8-pin connector - T8f-

- 9 - Subwoofer - R211-
- 10 - Centre loudspeaker - R208-
- 13 - Subwoofer - R211-
- 14 - Centre loudspeaker - R208-
- 17 - Terminal 31
- 18 - Terminal 30

E - 12-pin connector - T12d-

- 7 - Open circuit diagnostic lead



4 - MOST bus

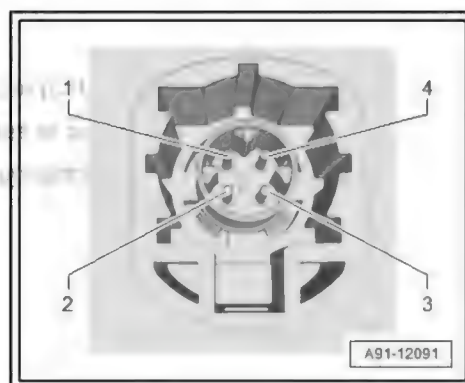
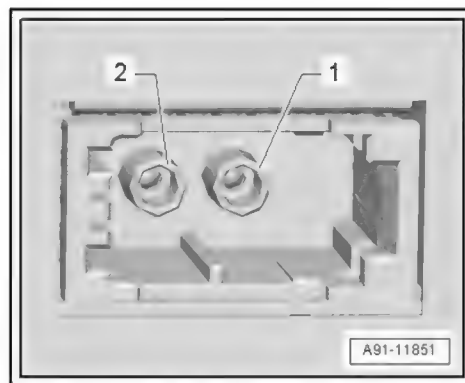
- 1 - Output
- 2 - Input



6 - 4-pin connector - T4df-

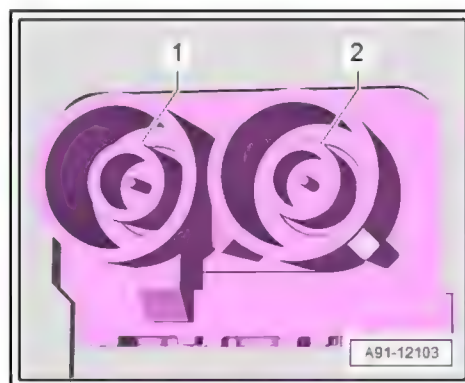
All pins are connected to the display unit for front information display and operating unit control unit - J685-.

- 1 - LVDS (-)
- 2 - LIN
- 3 - LVDS (+)
- 4 - Earth



7 - Aerial connection, AM/FM1/FM2

- 1 - Contact 2, AM/FM1 from aerial amplifier 2 - R111- , radio aerial 2 - R93-
- 2 - Contact 1, FM2 from aerial amplifier - R24- , aerial - R11-



4.4.2 Pin assignment for radio - R- , RMC plus, 8DP



1 - DAB connection from aerial amplifier 3 - R112- , digital radio aerial - R183- , Europe/ rest-of-world and QV3 only

- SAT connection from roof aerial - R216- , satellite aerial - R170- , QV8 and USA only

2 - Not used

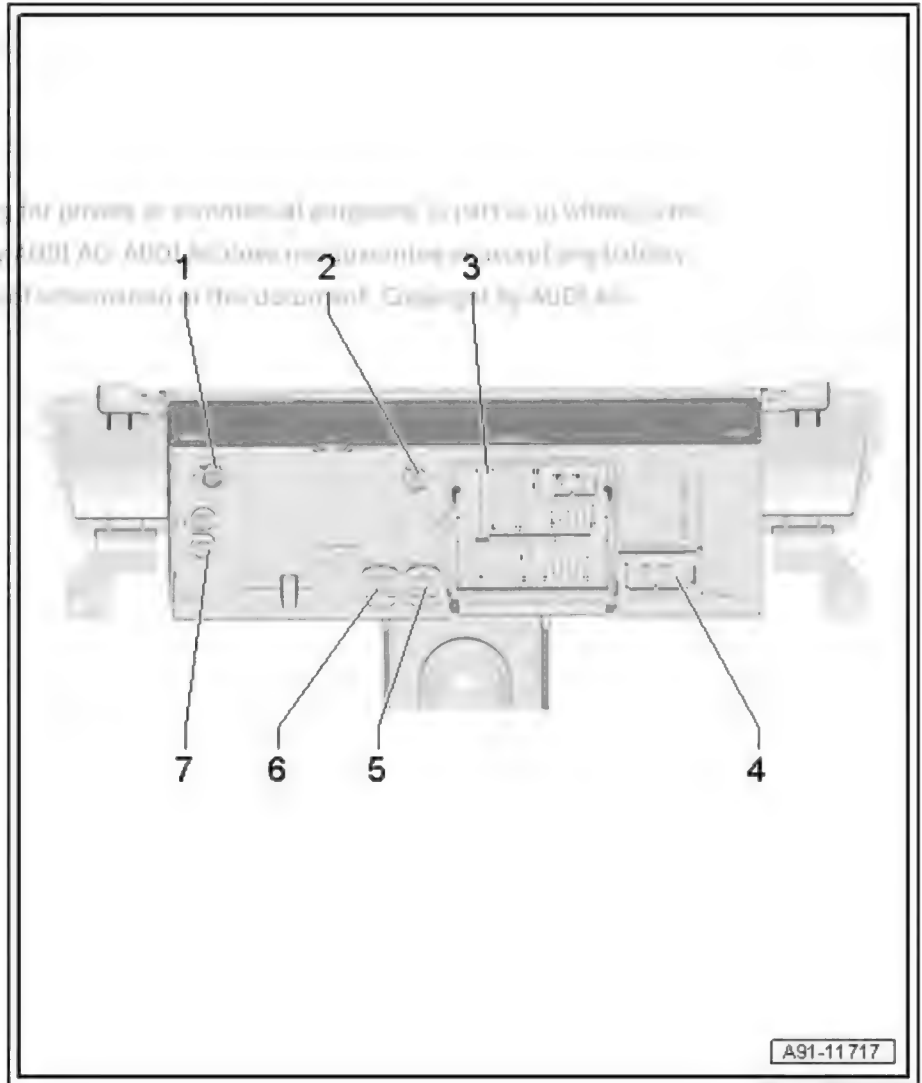
3 - Connection block with four multi-pin connectors

4 - MOST bus

5 - 4-pin connector - T4z- to connection for external audio sources - R199-

6 - 4-pin connector - T4df- to display unit for front information display and operating unit control unit - J685-

7 - Aerial connection, AM/FM/ FM2



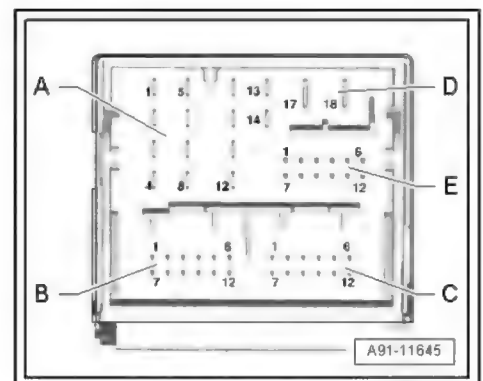
Note

Contacts which are not listed are not used.

3 - Connection block with four multi-pin connectors

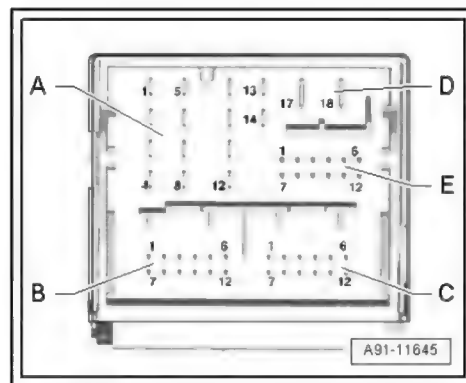
A - 8-pin connector - T8e-

- 1 - Loudspeaker (+), rear right
- 2 - Loudspeaker (+), front right
- 3 - Loudspeaker (+), front left
- 4 - Loudspeaker (+), rear left
- 5 - Loudspeaker (-), rear right
- 6 - Loudspeaker (-), front right
- 7 - Loudspeaker (-), front left
- 8 - Loudspeaker (-), rear left



B - 12-pin connector - T12c-

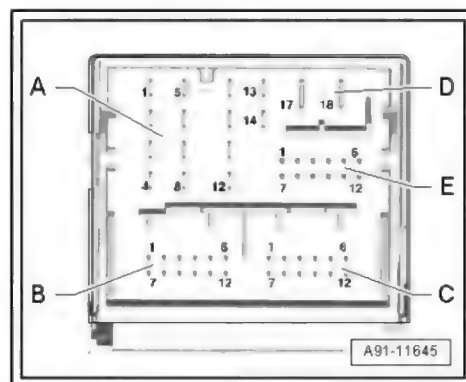
- 1 - Data from multimedia system operating unit - E380-
- 2 - RES BT multimedia system operating unit - E380-
- 3 - Not used
- 4 - Microphone input (+) from microphone unit in front roof module - R164- , front left microphone - R140-
- 5 - Not used
- 6 - Not used
- 7 - Data to multimedia system operating unit - E380-
- 8 - Wake-up multimedia system operating unit - E380-
- 9 - Res HU to multimedia system operating unit - E380-
- 10 - Not used
- 11 - Not used
- 12 - Microphone input (-) from microphone unit in front roof module - R164- , front left microphone - R140-



C - 12-pin connector - T12e-

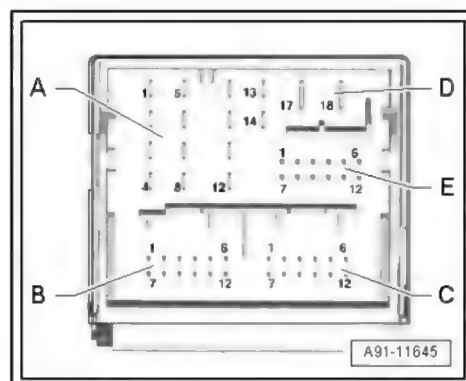
All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB, +5 V
- 4 - USB, earth
- 5 - iPod, ACC power
- 6 - Detect
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data



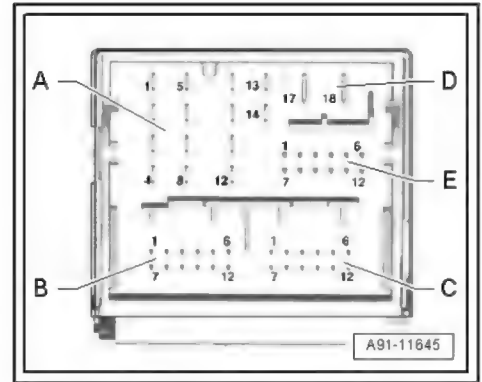
D - 8-pin connector - T8f-

- 9 - Subwoofer - R211-
- 10 - Centre loudspeaker - R208-
- 13 - Subwoofer - R211-
- 14 - Centre loudspeaker - R208-
- 17 - Terminal 31
- 18 - Terminal 30





E - 12-pin connector - T12d-
7 - Open circuit diagnostic lead

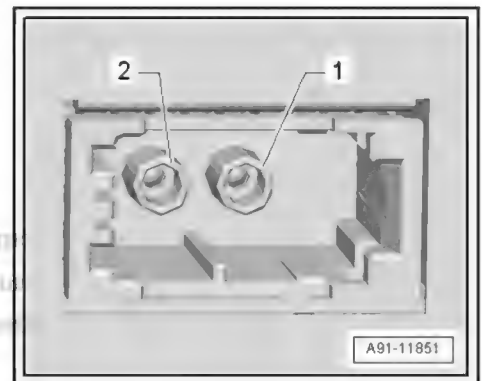


4 - MOST bus

- 1 - Output
- 2 - Input



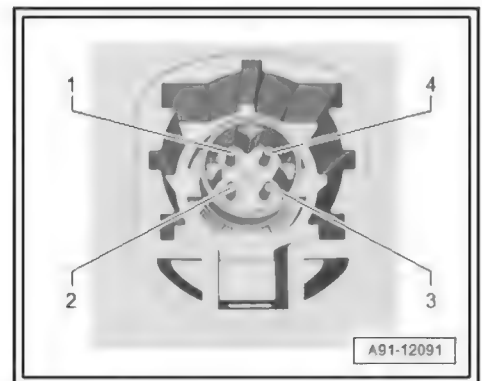
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5 - 4-pin connector - T4z-

All pins are connected to the connection for external audio sources - R199- .

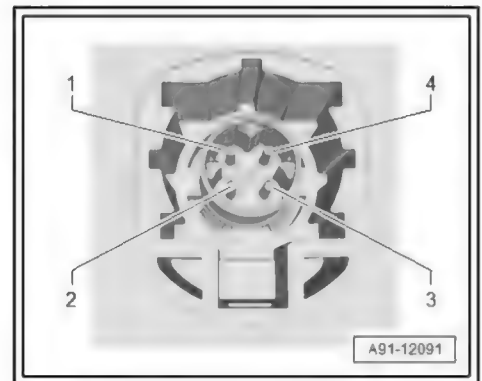
- 1 - D (+)
- 2 - iPod detected
- 3 - D (-)
- 4 - Earth



6 - 4-pin connector - T4df-

All pins are connected to the display unit for front information display and operating unit control unit - J685- .

- 1 - LVDS (-)
- 2 - LIN
- 3 - LVDS (+)
- 4 - Earth

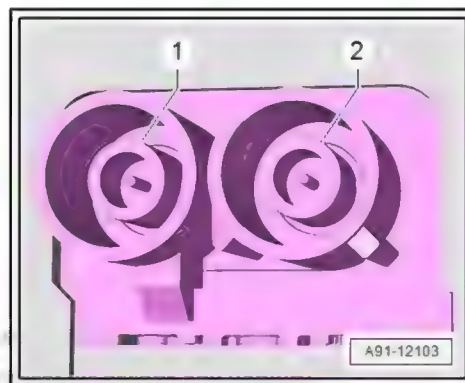


7 - aerial connection AM/FM1/FM2

- 1 - Contact 2, AM/FM1 from aerial amplifier 2 - R111- , radio aerial 2 - R93-
- 2 - Contact 1, FM2 from aerial amplifier - R24- , aerial - R11-



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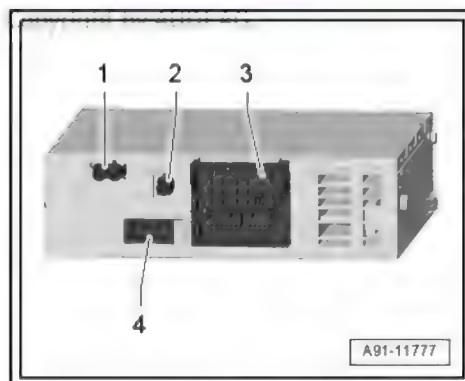


4.4.3 Pin assignment for radio - R- , MMI, 8YQ/8AJ

Radio - R-

Europe/rest-of-world and QV3 only

- 1 - Aerial connection, AM/FM1/FM2
- 2 - DAB connection from aerial amplifier 3 - R112- , digital radio aerial - R183-
- 3 - Connection block with four multi-pin connectors
- 4 - MOST bus



QV8 and USA only

- 1 - Aerial connection, AM/FM1/FM2
- 2 - SAT connection from roof aerial - R216- , satellite aerial - R170-
- 3 - Connection block with four multi-pin connectors
- 4 - MOST bus

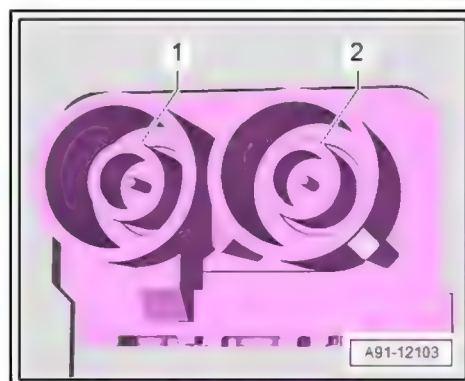


Note

Contacts which are not listed are not used.

1 - Aerial connection, AM/FM1/FM2

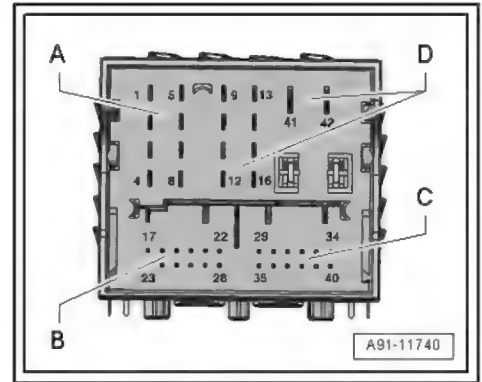
- 1 - Contact 2, AM/FM1 from aerial amplifier 2 - R111- , radio aerial 2 - R93-
- 2 - Contact 1, FM2 from aerial amplifier - R24- , aerial - R11-
- 3 - Connection block with four multi-pin connectors





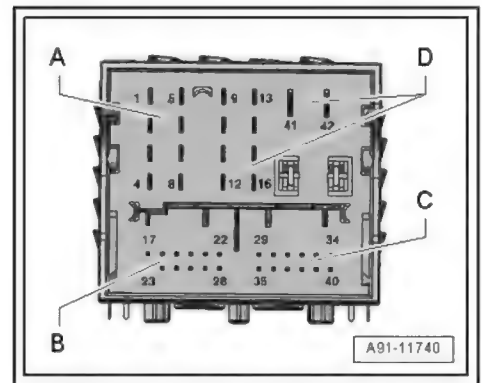
A - 8-pin connector - T8r-

- 1 - Loudspeaker (+), rear right
- 2 - Loudspeaker (+), front right
- 3 - Loudspeaker (+), front left
- 4 - Loudspeaker (+), rear left
- 5 - Loudspeaker (-), rear right
- 6 - Loudspeaker (-), front right
- 7 - Loudspeaker (-), front left
- 8 - Loudspeaker (-), rear left



B - 12-pin connector - T12-

- 17 - NF in, left-side (low frequency)
- 18 - NF in, earth (low frequency)
- 19 - NF in, diag (low frequency)
- 21 - NF diag (low frequency)
- 22 - NF (low frequency) (-)
- 23 - NF in, right-side (low frequency)
- 24 - NF in, screen earth (low frequency)
- 27 - NF screen earth (low frequency)
- 28 - NF (low frequency) (+)

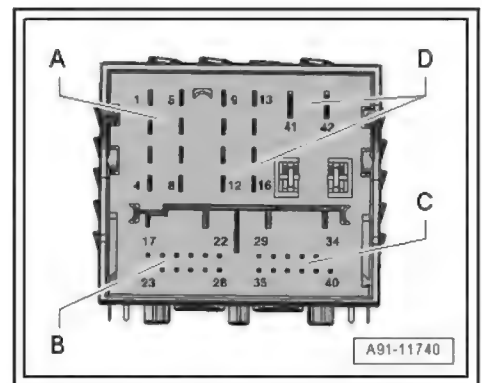


C - 12-pin connector - T12-

China only

All pins are connected to the multimedia system operating unit 2 - E499- (rear centre armrest).

- 29 - Headphones output 1 (diag)
- 31 - Headphones output 1/2 (diag)
- 34 - Headphones output 2 (diag)
- 35 - Headphones output 1 (left)
- 36 - Headphones output 1 (earth)
- 37 - Headphones output 1 (right)
- 38 - Headphones output 2 (left)
- 39 - Headphones output 2 (earth)
- 40 - Headphones output 2 (right)



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D - 10-pin connector - T10i-

9 - Subwoofer - R211-

10 - Centre loudspeaker - R208-

11 - Open circuit diagnostic lead

13 - Subwoofer - R211-

14 - Centre loudspeaker - R208-

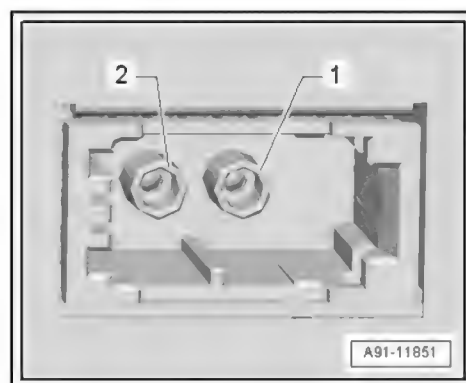
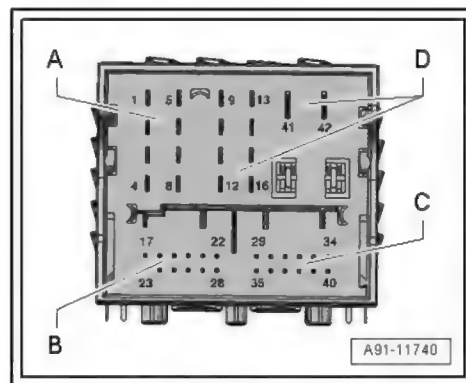
41 - Terminal 31

42 - Terminal 30

4 - MOST bus

1 - Output

2 - Input



4.4.4 Pin assignment for radio - R- , MMI, I8H

Radio - R- is integrated in control unit 1 for information electronics
- J794- ⇒ Current flow diagrams, Electrical fault finding and Fitting
locations.



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5 DVD/CD changer

⇒ "5.1 Pin assignment", page 149

⇒ "5.2 Removing and installing CD changer", page 151

⇒ "5.3 Removing and installing DVD changer", page 152

5.1 Pin assignment

⇒ "5.1.1 Pin assignment for CD changer R41", page 149

⇒ "5.1.2 Pin assignment for DVD changer R161, up to model year 2014", page 150

⇒ "5.1.3 Pin assignment for DVD changer R161, from model year 2015 onwards", page 150

5.1.1 Pin assignment for CD changer - R41-

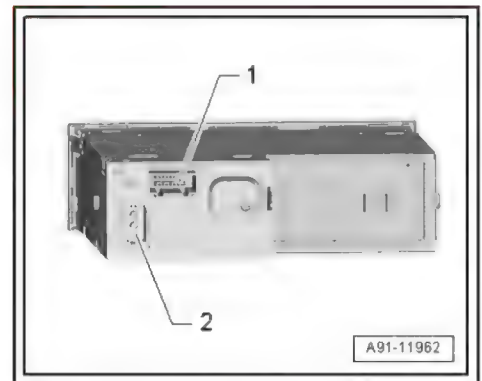
CD changer - R41-

- 1 - 8-pin connector - T8g-
- 2 - MOST bus



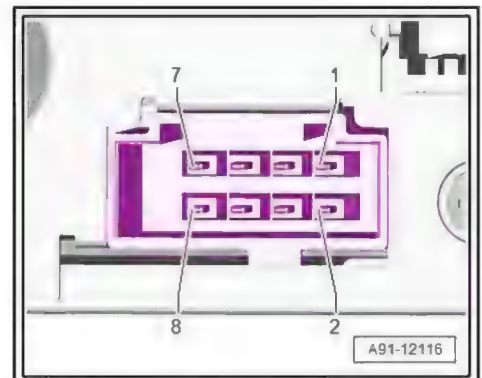
Note

Contacts which are not listed are not used.



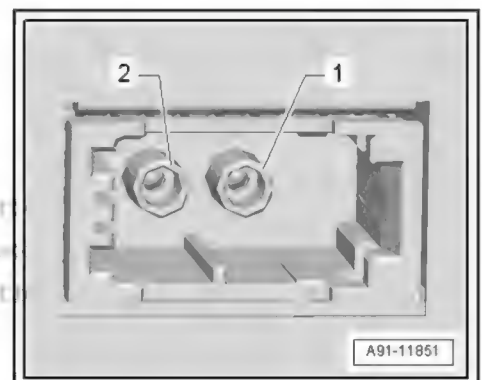
1 - 8-pin connector - T8g-

- 1 - Terminal 31
- 2 - Terminal 30
- 3 - Not used
- 4 - Not used
- 5 - Open circuit diagnostic lead



2 - MOST bus

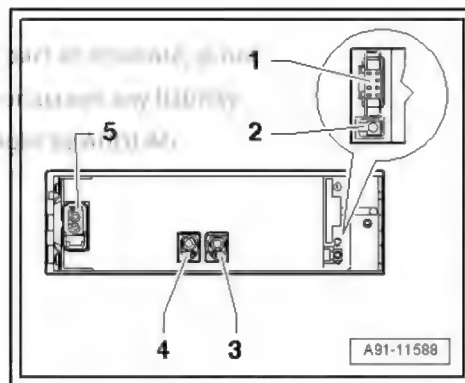
- 1 - Output
- 2 - Input



5.1.2 Pin assignment for DVD changer - R161- , up to model year 2014

DVD changer - R161-

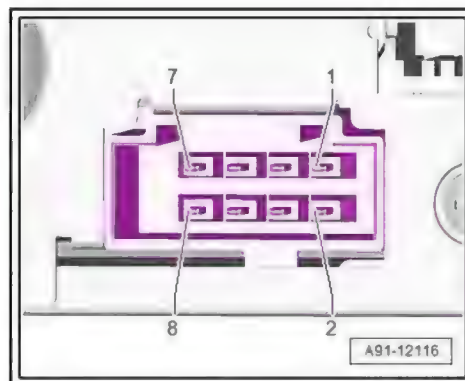
- 1 - 8-pin connector - T8g-
- 2 - FBAS input from TV tuner - R78-
- 3 - FBAS output to control unit 1 for information electronics - J794-
- 4 - Not used
- 5 - MOST bus



Note

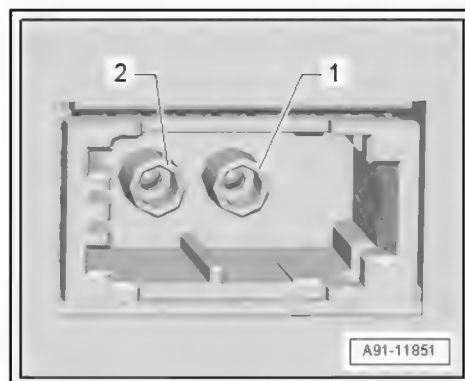
Contacts which are not listed are not used.

- 1 - 8-pin connector - T8g-
- 1 - Terminal 31
- 2 - Terminal 30
- 3 - Not used
- 4 - Not used
- 5 - Open circuit diagnostic lead



5 - MOST bus

- 1 - Input
- 2 - Output



5.1.3 Pin assignment for DVD changer - R161- , from model year 2015 onwards

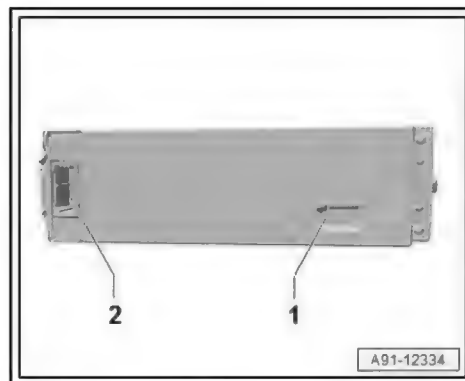
DVD changer - R161-

- 1 - 8-pin connector - T8g-
- 2 - MOST bus



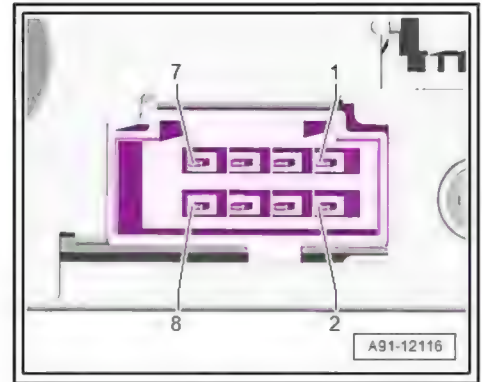
Note

Contacts which are not listed are not used.



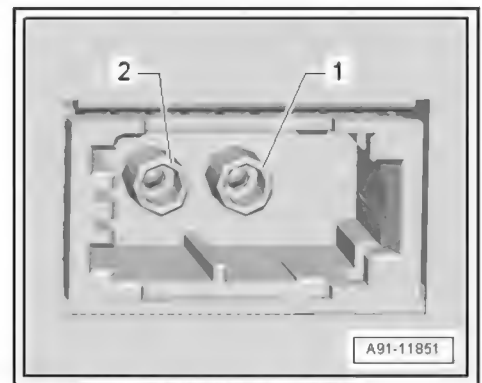
1 - 8-pin connector - T8g-

- 1 - Terminal 31
- 2 - Terminal 30
- 3 - Not used
- 4 - Not used
- 5 - Open circuit diagnostic lead



5 - MOST bus

- 1 - Input
- 2 - Output



5.2 Removing and installing CD changer

Special tools and workshop equipment required

- ◆ Radio release tool - T10057-



- ◆ Protective cap for cable connector - VAS 6223/9-



The CD changer - R41- is fitted in the glove box.

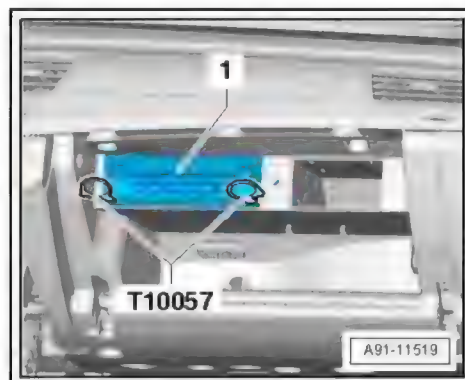


Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ⇒ Vehicle diagnostic tester.

Removing

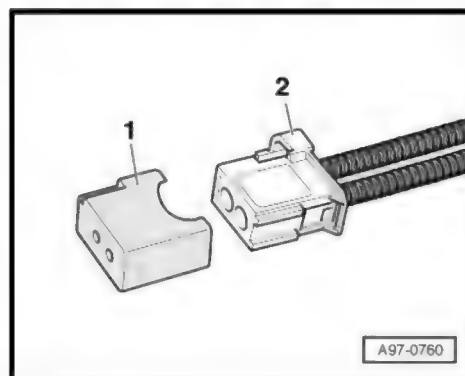
- Open glove box.
- Take out any CD that is still in CD changer - R41- .
- Switch off ignition and all electrical equipment, and remove ignition key.
- Insert two radio release tools - T10057- into slots on CD changer - R41- -1- until they engage. Pointed ends of grips must face outwards.
- Pull CD changer - R41- out of mounting frame.
- Release and unplug all connectors on CD changer - R41- .



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.
- Press release tabs on CD changer - R41- and remove radio release tools - T10057- .

Installing

- Installation is carried out in reverse sequence; note the following:
- Plug all connectors in.
- Slide CD changer - R41- into mounting frame until it engages.



5.3 Removing and installing DVD changer

Special tools and workshop equipment required

- ◆ Radio release tool - T10057-





◆ Protective cap for cable connector - VAS 6223/9-



The DVD changer - R161- is fitted in the glove box.

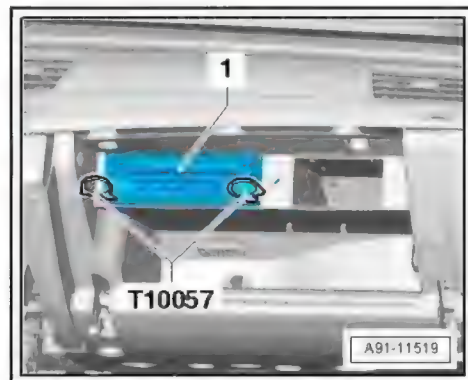


Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ➔ Vehicle diagnostic tester.

Removing

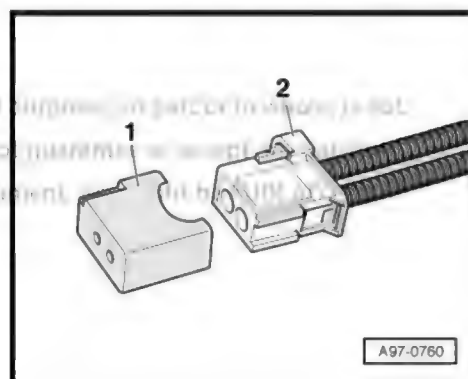
- Open glove box.
- Take out any DVD that is still in DVD changer - R161- .
- Switch off ignition and all electrical equipment, and remove ignition key.
- Insert two radio release tools - T10057- into slots on DVD changer - R161- -1- until they engage. Pointed ends of grips must face outwards.
- Pull DVD changer - R161- out of mounting frame.
- Release and unplug connectors on DVD changer - R161- .



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.
- Press release tabs on DVD changer - R161- and remove radio release tools - T10057- .

Installing

- Installation is carried out in reverse sequence; note the following:
- Plug all connectors in.
- Slide DVD changer - R161- into mounting frame until it engages.





6 Telephone system

⇒ ["6.1 Layout - telephone", page 154](#)

⇒ ["6.2 Overview of fitting locations - telephone system", page 168](#)

⇒ ["6.3 Exploded view - microphone unit", page 170](#)

⇒ ["6.4 Removing and installing microphone unit in front roof module R164 ", page 170](#)

⇒ ["6.5 Removing and installing aerial amplifier for mobile telephone R86 ", page 171](#)

⇒ ["6.6 Removing and installing telephone bracket R126 ", page 173](#)

⇒ ["6.7 Pin assignment", page 176](#)

6.1 Layout - telephone

⇒ ["6.1.1 Layout - telephone, mobile phone pre-installation, 9ZF, up to model year 2014", page 154](#)

⇒ ["6.1.2 Layout - telephone, Bluetooth car phone, 9ZW, up to model year 2014", page 156](#)

⇒ ["6.1.3 Layout - telephone, Bluetooth hands-free system, 9ZX", page 158](#)

⇒ ["6.1.4 Layout - telephone, Audi phone box and Audi connect, 9ZC, from model year 2015 onwards", page 161](#)

⇒ ["6.1.5 Layout - telephone, Audi phone box, 9ZE, from model year 2015 onwards", page 163](#)

⇒ ["6.1.6 Layout - telephone, Audi connect with Bluetooth car phone, 9ZK, from model year 2015 onwards", page 165](#)

6.1.1 Layout - telephone, mobile phone pre-installation, 9ZF, up to model year 2014

The telephone bracket - R126- is fitted in the centre console. The system is operated using the MMI infotainment system or the mobile telephone - R54- .

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One of these microphones (front left microphone - R140-) is connected directly to the control unit 1 for information electronics - J794- .

The aerial connection is located at the telephone bracket - R126- .

9ZF - Mobile phone pre-installation in control unit 1 for information electronics - J794-



1 - Roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - Control unit 1 for information electronics - J794- in dash panel

5 - Front right microphone - R141- , microphone unit in front roof module - R164- in front interior light - W1-

6 - Data bus diagnostic interface - J533- beneath rear seat bench

7 - Steering column electronics control unit - J527- on steering column on steering column switch

8 - Multi-function steering wheel

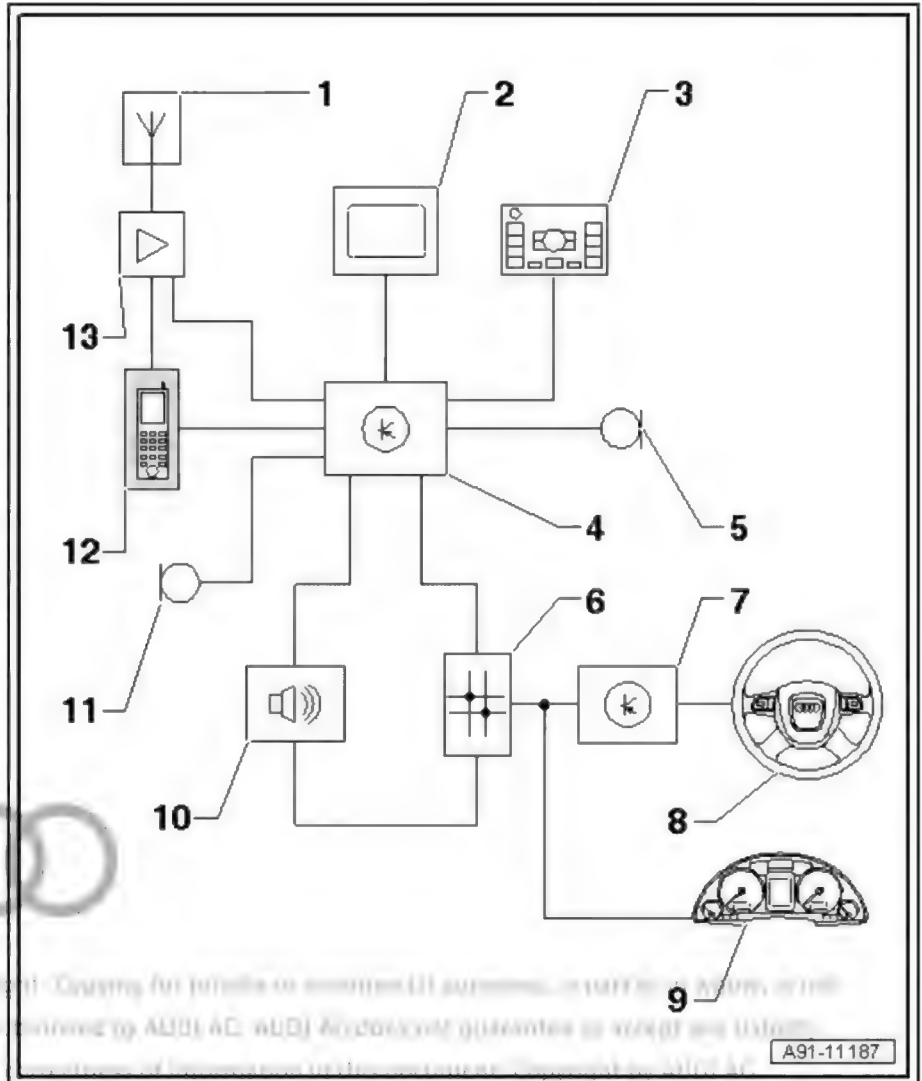
9 - Control unit in dash panel insert - J285- in dash panel

10 - Digital sound package control unit - J525- in luggage compartment (rear left)

11 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-

12 - Telephone bracket - R126- with mobile telephone - R54-

13 - Aerial amplifier for mobile telephone - R86- in luggage compartment (rear right)



Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

Notes on Bluetooth technology

A standardised radio connection system (Bluetooth technology) is used to transmit data between the control unit 1 for information electronics - J794- and the telephone handset - R37- / mobile telephone - R54- .

The range of the radio wave connection is approx. 10 m.

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.

If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ➔ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



6.1.2 Layout - telephone, Bluetooth car phone, 9ZW, up to model year 2014

The Bluetooth car phone supports the operation of Bluetooth mobile telephones - R54- . It is not necessary to fit the Bluetooth mobile telephone - R54- into a bracket and it does not have to be linked to the hands-free unit in the vehicle.

In this case, the Bluetooth link is the only means of connecting the mobile phone. It is also possible to read out the SIM card of the mobile telephone - R54- (telephone directory).

The Bluetooth car phone has its own telephone handset - R37- (Bluetooth handset) equipped with SIM card slide-in module and charging cradle.

The Bluetooth car phone and the mobile telephone - R54- are either operated via the telephone handset - R37- , the hands-free unit with multi-function steering wheel or via the speech dialogue system.

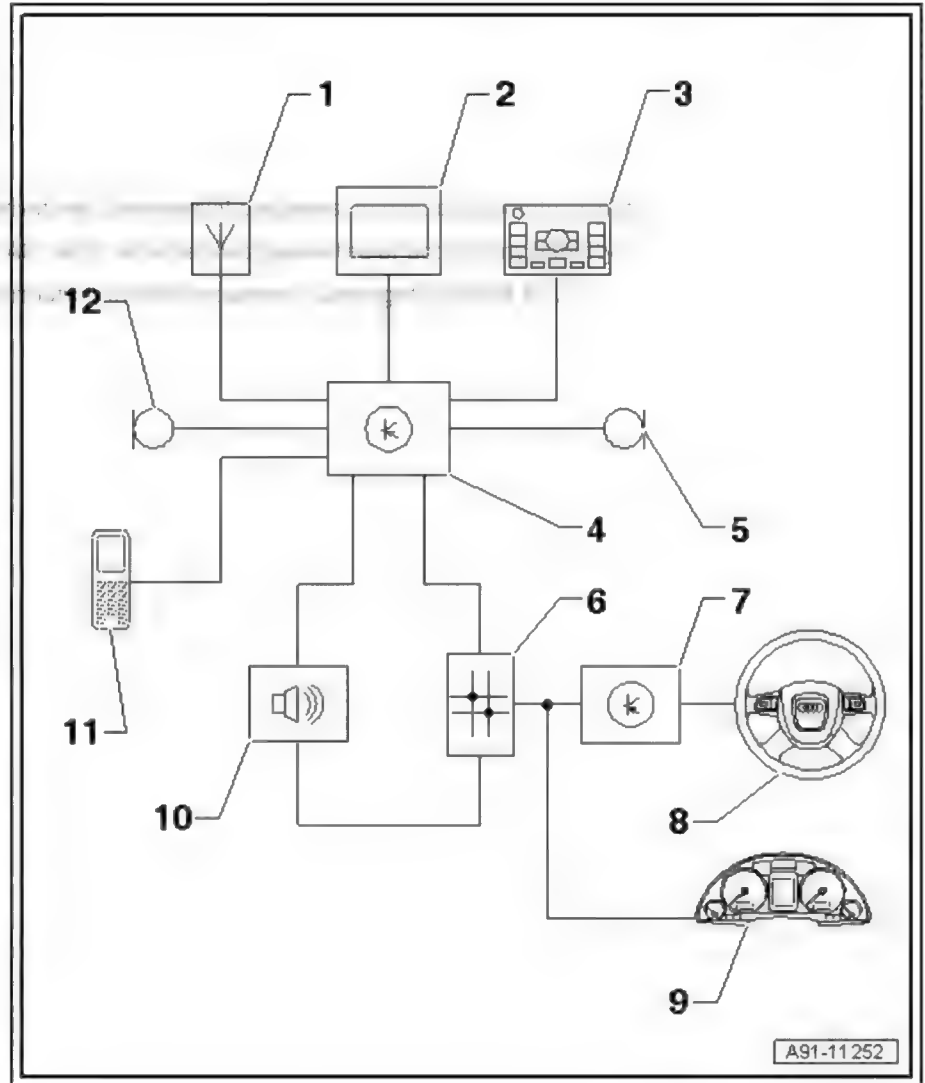
The aerial for Bluetooth - R152- is fitted in control unit 1 for information electronics - J794- .

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One of these microphones (front left microphone - R140-) is connected directly to the control unit 1 for information electronics - J794- .

The aerial connection is located at the control unit 1 for information electronics - J794- .

9ZW - Bluetooth car phone in control unit 1 for information electronics - J794-

- 1 - Roof aerial - R216-
- 2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- 3 - Multimedia system operating unit - E380- in centre console
- 4 - Control unit 1 for information electronics - J794- in dash panel
- 5 - Front right microphone - R141- , microphone unit in front roof module - R164- in front interior light - W1-
- 6 - Data bus diagnostic interface - J533- beneath rear seat bench
- 7 - Steering column electronics control unit - J527- on steering column on steering column switch
- 8 - Multi-function steering wheel
- 9 - Control unit in dash panel insert - J285- in dash panel
- 10 - Digital sound package control unit - J525- in luggage compartment (rear left)
- 11 - Telephone bracket - R126- with telephone handset - R37-
- 12 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-



Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

Notes on Bluetooth technology

A standardised radio connection system (Bluetooth technology) is used to transmit data between the control unit 1 for information electronics - J794- and the telephone handset - R37- / mobile telephone - R54- .

The range of the radio wave connection is approx. 10 m.

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.

If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .

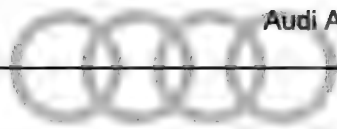


6.1.3 Layout - telephone, Bluetooth hands-free system, 9ZX

The control unit 1 for information electronics - J794- with microphone unit in front roof module - R164- is fitted and serves solely as a hands-free system. The mobile telephone - R54- is connected via Bluetooth.

The aerial for Bluetooth - R152- is fitted in control unit 1 for information electronics - J794- .

9ZX - Bluetooth hands-free system in control unit 1 for information electronics - J794-



1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

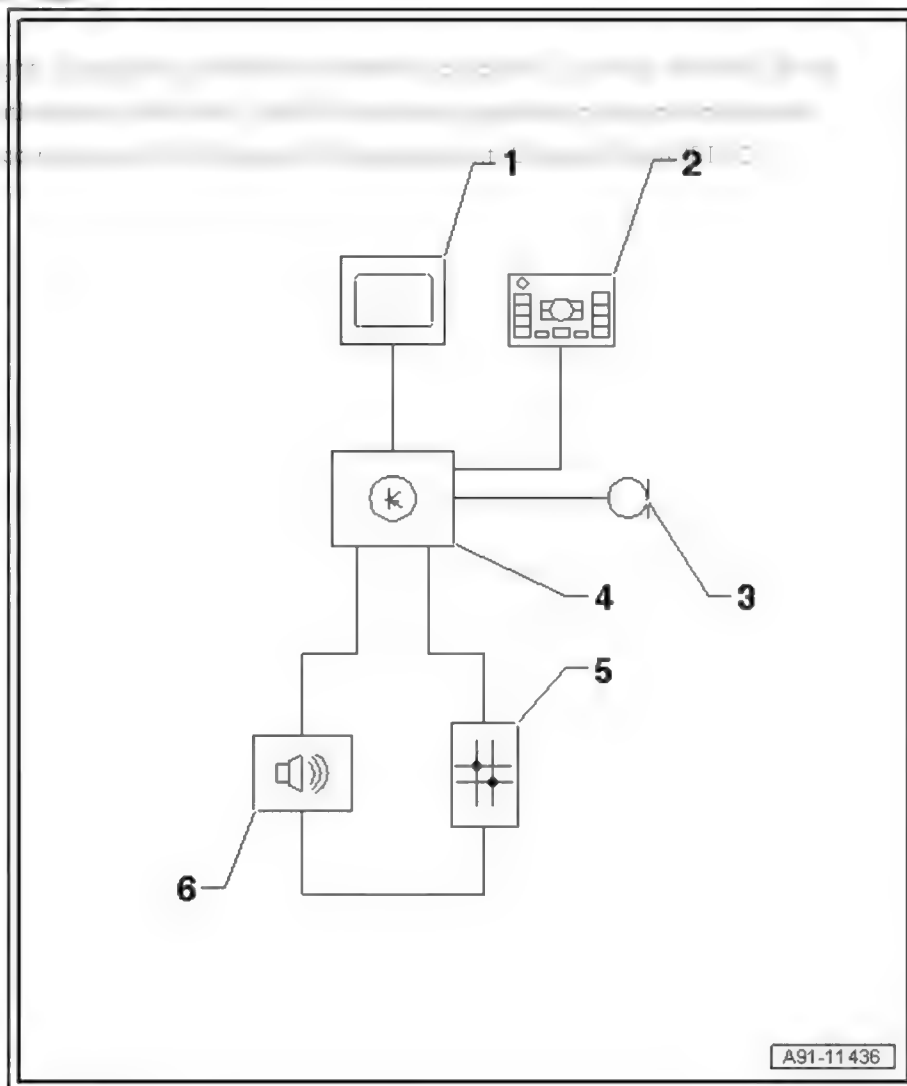
2 - Multimedia system operating unit - E380- in centre console

3 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-

4 - Control unit 1 for information electronics - J794- in dash panel

5 - Data bus diagnostic interface - J533- beneath rear seat bench

6 - Digital sound package control unit - J525- in luggage compartment (rear left)



Aerials for Bluetooth hands-free system, 9ZX

- ◆ No telephone aerial - R65- is fitted
- ◆ No LTE aerials (-R297- / -R306-) are fitted

1 - Control unit 1 for information electronics - J794-

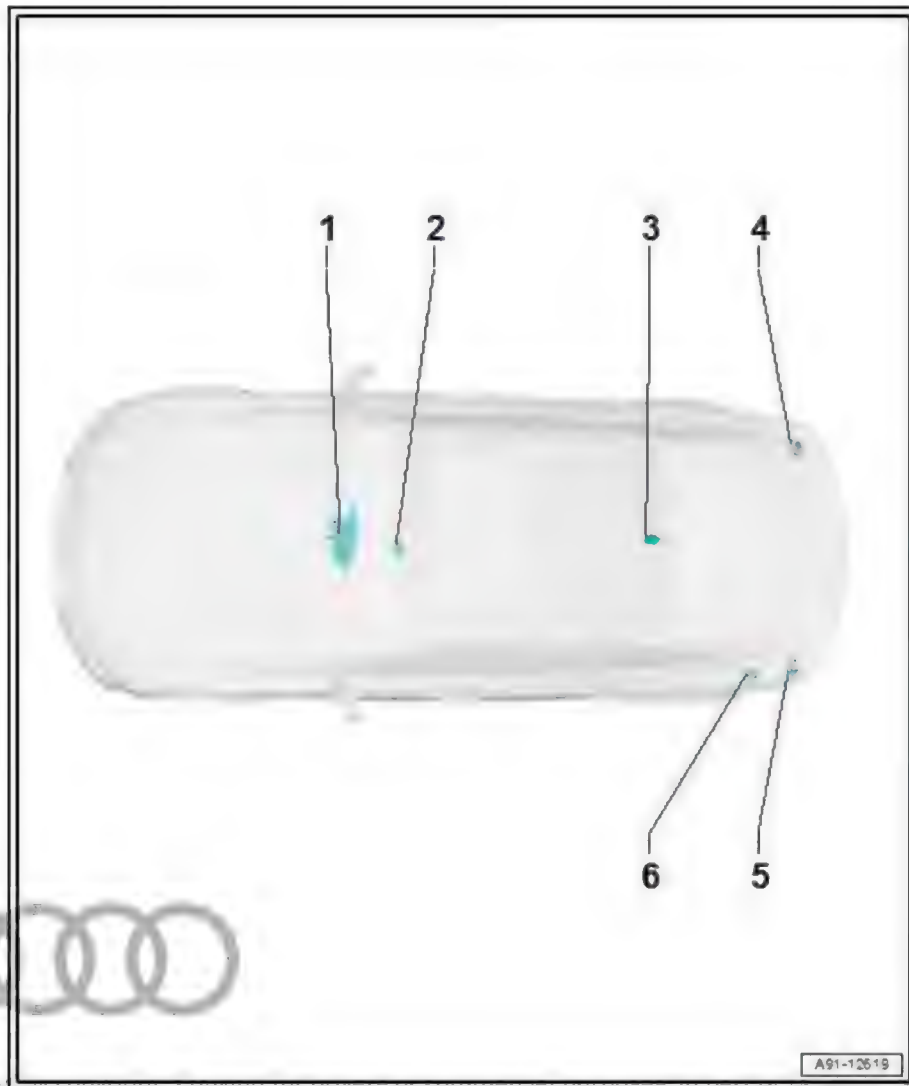
2 - Not fitted

3 - Roof aerial - R216-

4 - Not fitted

5 - Not fitted

6 - Not fitted



Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

Notes on Bluetooth technology

A standardised radio connection system (Bluetooth technology) is used to transmit data between the control unit 1 for information electronics - J794- and the telephone handset - R37- / mobile telephone - R54- .

The range of the radio wave connection is approx. 10 m.

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.



If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ➔ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



6.1.4 Layout - telephone, Audi phone box and Audi connect, 9ZC, from model year 2015 onwards

The telephone bracket - R126- (Audi phone box) is fitted in the centre console. The system is operated using the MMI infotainment system or the mobile telephone - R54- .

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One of these microphones (front left microphone - R140-) is connected directly to the control unit 1 for information electronics - J794- .

The connection to the mobile phone network is established via the telephone aerial - R65- .

The aerial connection is located at the aerial amplifier for mobile telephone - R86- .

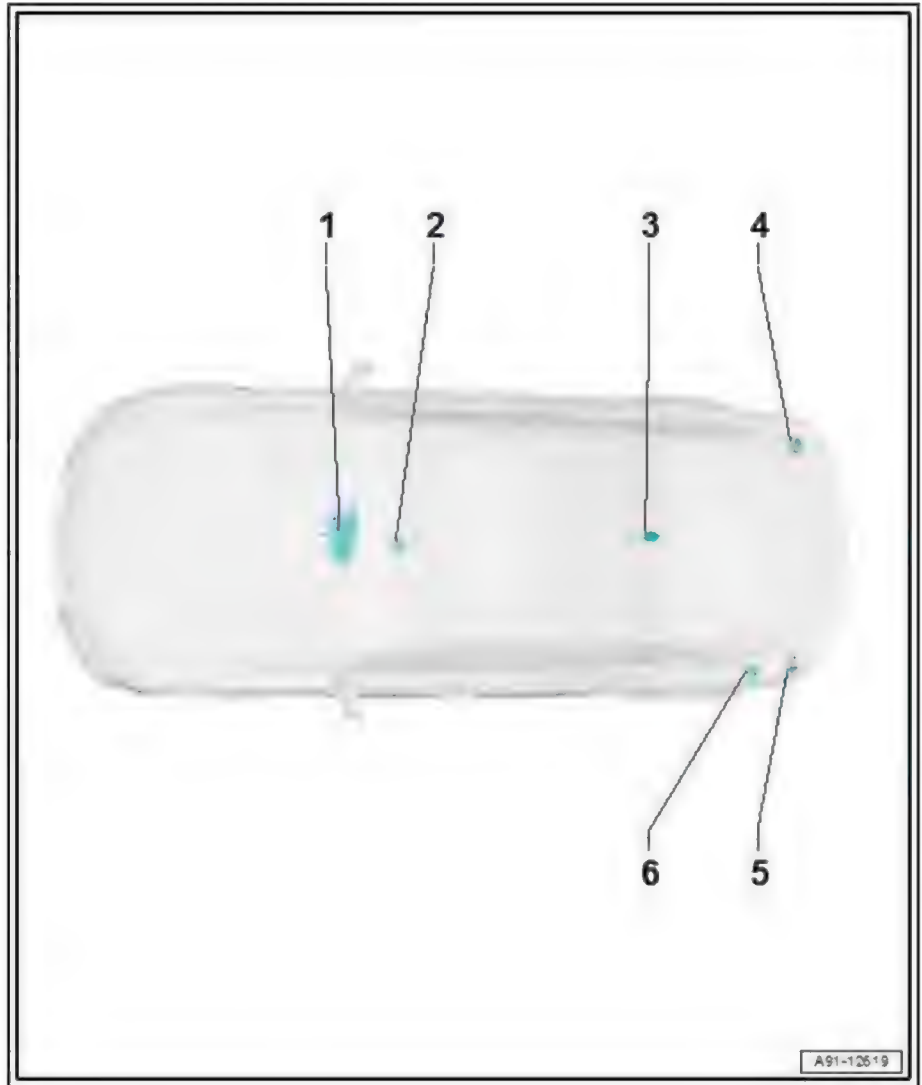
For data transfer, two LTE aerials (LTE aerial 1 - R297- / LTE aerial 2 - R306-) are fitted and connected to the control unit 1 for information electronics - J794- .

9ZC - Audi phone box and Audi connect

- [illegible]

- ◆ Telephone aerial - R65- is fitted underneath rear bumper cover (left-side)
- ◆ LTE aerial 1 - R297- is fitted in roof aerial - R216- .
- ◆ LTE aerial 2 - R306- is fitted underneath rear bumper cover (right-side)

- 1 - Control unit 1 for information electronics - J794-
- 2 - Telephone bracket - R126-
- 3 - Roof aerial - R216-
 - LTE aerial 1 - R297-
- 4 - Bumper aerial (right-side)
 - LTE aerial 2 - R306-
- 5 - Bumper aerial (left-side)
 - Telephone aerial - R65-
- 6 - Aerial amplifier for mobile telephone - R86-



Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

Notes on Bluetooth technology

A standardised radio connection system (Bluetooth technology) is used to transmit data between the control unit 1 for information electronics - J794- and the mobile telephone - R54- .

The range of the radio wave connection is approx. 10 m.

6.1.5 Layout - telephone, Audi phone box, 9ZE, from model year 2015 onwards

The telephone bracket - R126- (Audi phone box) is fitted in the centre console. The system is operated using the MMI infotainment system or the mobile telephone - R54- .

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One of these microphones (front left microphone - R140-) is connected directly to the control unit 1 for information electronics - J794- .

The connection to the mobile phone network is established via the telephone aerial - R65- in the roof aerial - R216- .

The aerial connection is located at the aerial amplifier for mobile telephone - R86- .

9ZE - Audi phone box

1 - Multimedia system operating unit - E380- in centre console

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Telephone aerial - R65- in roof aerial - R216-

4 - Control unit 1 for information electronics - J794- in dash panel

5 - Aerial amplifier for mobile telephone - R86- in luggage compartment (rear left)

6 - Telephone bracket - R126- with mobile telephone - R54-

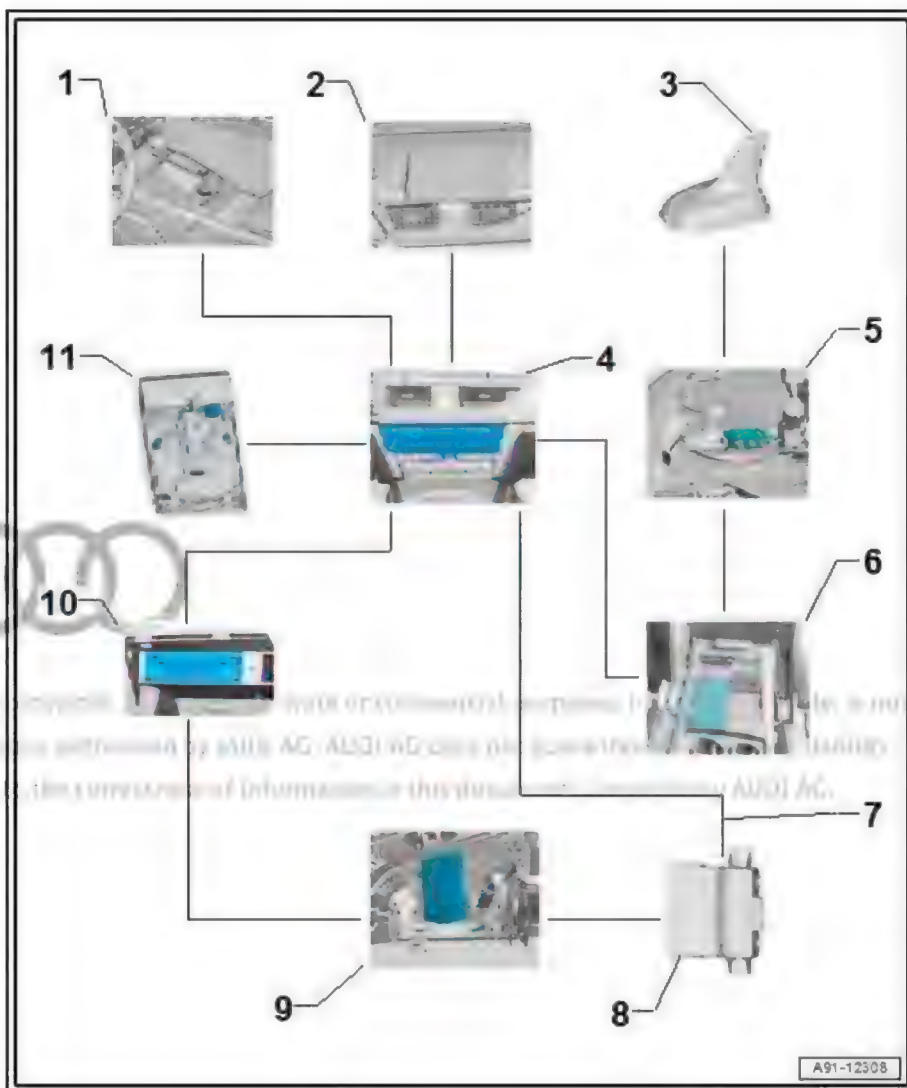
7 - MOST bus

8 - Data bus diagnostic interface - J533- beneath rear seat bench

9 - Digital sound package control unit - J525- in luggage compartment (rear left)

10 - DVD changer - R161- in glove box

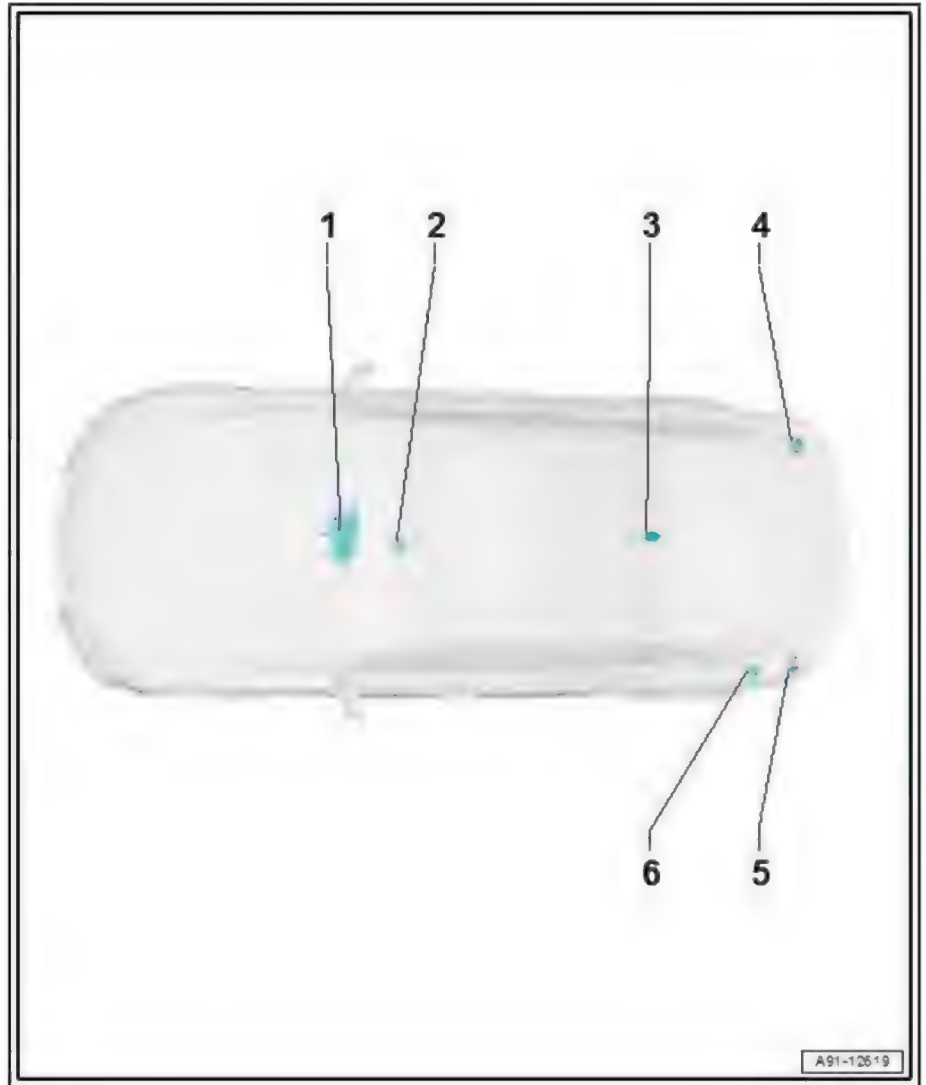
11 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-



Aerials for Audi phone box, 9ZE

- ◆ Telephone aerial - R65- is fitted in roof aerial - R216-
- ◆ No LTE aerials (-R297- / -R306-) are fitted

- 1 - Control unit 1 for information electronics - J794-
- 2 - Telephone bracket - R126-
- 3 - Roof aerial - R216-
- Telephone aerial - R65-
- 4 - Not fitted
- 5 - Not fitted
- 6 - Aerial amplifier for mobile telephone - R86-



Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

Notes on Bluetooth technology

A standardised radio connection system (Bluetooth technology) is used to transmit data between the control unit 1 for information electronics - J794- and the mobile telephone - R54- .

The range of the radio wave connection is approx. 10 m.

6.1.6 Layout - telephone, Audi connect with Bluetooth car phone, 9ZK, from model year 2015 onwards

The control unit 1 for information electronics - J794- with microphone unit in front roof module - R164- is fitted and serves solely as the car phone. The mobile telephone - R54- is connected via Bluetooth.

The connection to the mobile phone network is established via the aerial of the mobile telephone - R54- .

The aerial for Bluetooth - R152- is fitted in control unit 1 for information electronics - J794- .

For data transfer, two LTE aerals (LTE aerial 1 - R297- / LTE aerial 2 - R306-) are fitted and connected to the control unit 1 for information electronics - J794- .

9ZK - Audi connect with Bluetooth car phone

1 - LTE aerial 1 - R297- in roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - LTE aerial 2 - R306- on bumper (right-side)

5 - Control unit 1 for information electronics - J794- in dash panel

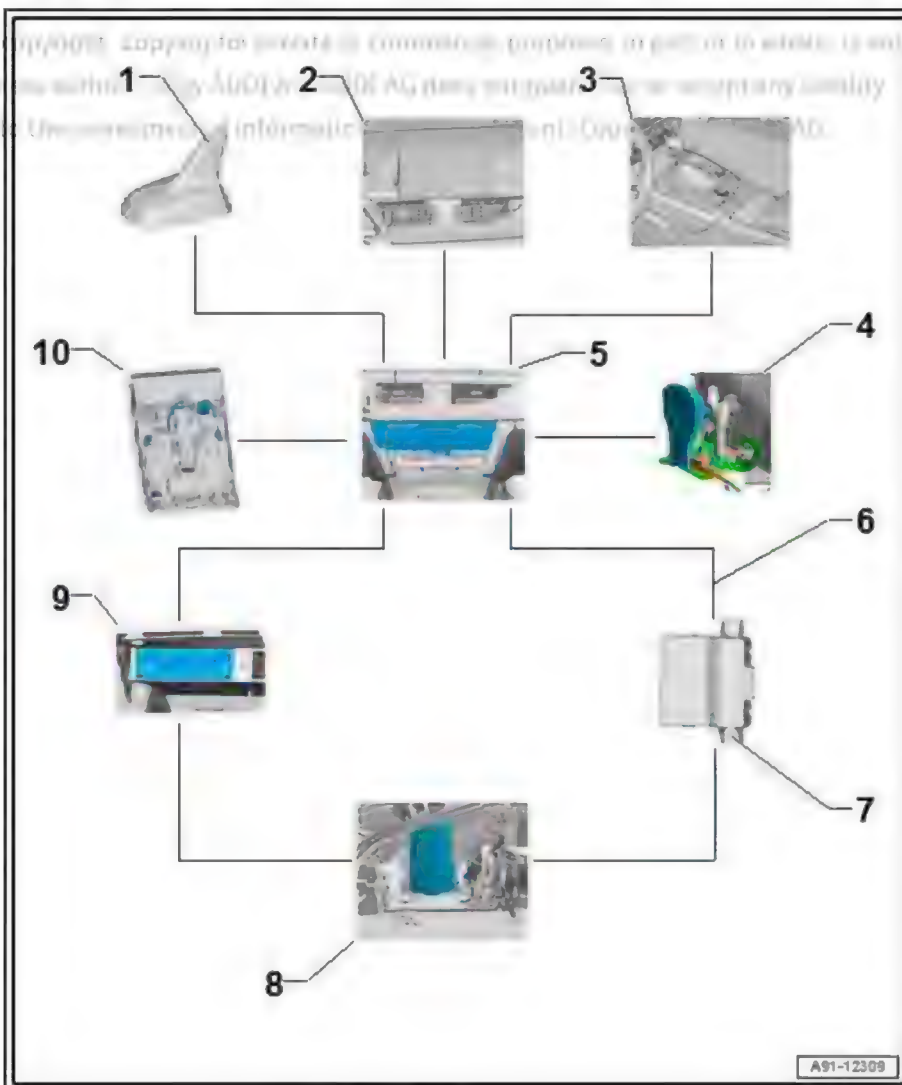
6 - MOST bus

7 - Data bus diagnostic interface - J533- beneath rear seat bench

8 - Digital sound package control unit - J525- in luggage compartment (rear left)

9 - DVD changer - R161- in glove box

10 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-



Aerials for Audi connect with Bluetooth car phone, 9ZK

- ◆ No telephone aerial - R65- is fitted
- ◆ Japan (up to week 45/2015), China (up to model year 2017): Telephone aerial - R65- is fitted in roof aerial - R216-
- ◆ LTE aerial 1 - R297- is fitted in roof aerial - R216- .
- ◆ LTE aerial 2 - R306- is fitted underneath rear bumper cover (right-side)

1 - Control unit 1 for information electronics - J794-

2 - Not fitted

3 - Roof aerial - R216-

- ☐ Telephone aerial - R65- , Japan (up to week 45/2015) and China (up to model year 2017)

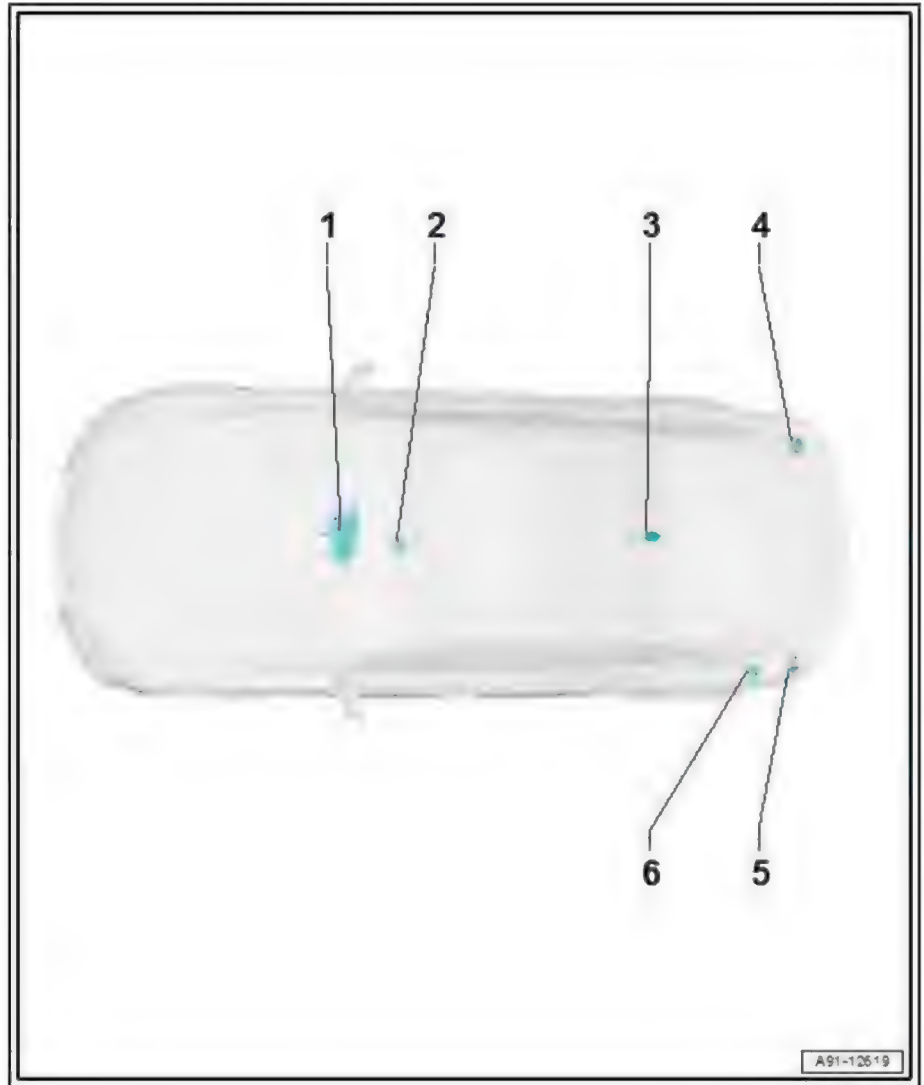
- ☐ LTE aerial 1 - R297-

4 - Bumper aerial (right-side)

- ☐ LTE aerial 2 - R306-

5 - Not fitted

6 - Not fitted



Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

Notes on Bluetooth technology

A standardised radio connection system (Bluetooth technology) is used to transmit data between the control unit 1 for information electronics - J794- and the mobile telephone - R54- .

The range of the radio wave connection is approx. 10 m.

6.2 Overview of fitting locations - telephone system

⇒ "6.2.1 Overview of fitting locations - telephone system, up to model year 2014", page 168

⇒ "6.2.2 Overview of fitting locations - telephone system, from model year 2015 onwards", page 169

6.2.1 Overview of fitting locations - telephone system, up to model year 2014

1 - Telephone bracket - R126-

- ❑ Removing and installing ⇒ [page 173](#)

2 - Bolt

- ❑ 5x
- ❑ 1 Nm

3 - Centre console storage box

- ❑ Removing and installing ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console storage box (front) .

4 - Aerial amplifier for mobile telephone - R86-

- ❑ Pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Removing and installing ⇒ [page 171](#)

5 - Front interior light - W1-

- ❑ Microphone unit in front roof module - R164-
- ❑ Overview ⇒ [page 170](#)

6 - 6-pin connector - T6e-

7 - Front left microphone - R140-

- ❑ Removing and installing ⇒ [page 170](#)

8 - Front right microphone - R141-

- ❑ Removing and installing ⇒ [page 170](#)

9 - Internal microphone - R74-

- ❑ Removing and installing ⇒ [page 170](#)

10 - Control unit 1 for information electronics - J794-

- ❑ Pin assignment for mobile phone pre-installation, RMC ⇒ [page 176](#)
- ❑ Pin assignment for mobile phone pre-installation, MMI ⇒ [page 180](#)
- ❑ Pin assignment for Bluetooth car phone ⇒ [page 183](#)
- ❑ Pin assignment for Bluetooth hands-free system, RMC ⇒ [page 187](#)
- ❑ Pin assignment for Bluetooth hands-free system, MMI ⇒ [page 191](#)
- ❑ Removing and installing ⇒ [page 18](#)





- 11 - Trim
- 12 - Bolt
 - ☐ 4x
 - ☐ 1 Nm
- 13 - Bolt
 - ☐ 3 Nm
- 14 - Control unit 1 for information electronics - J794-

6.2.2 Overview of fitting locations - telephone system, from model year 2015 onwards

- 1 - Telephone bracket - R126-
 - ☐ Pin assignment
⇒ [page 194](#)
 - ☐ Removing and installing
⇒ [page 174](#)

- 2 - Bolt
 - ☐ 1 Nm

- 3 - Storage box in centre arm-rest
 - ☐ Removing and installing
⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console storage box (front) .

- 4 - Aerial amplifier for mobile telephone - R86-
 - ☐ Pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
 - ☐ Removing and installing
⇒ [page 172](#)

- 5 - Front interior light - W1-
 - ☐ Microphone unit in front roof module - R164-
 - ☐ Overview ⇒ [page 170](#)

- 6 - Front left microphone - R140-
 - ☐ Removing and installing
⇒ [page 170](#)

- 7 - Front right microphone - R141-
 - ☐ Removing and installing ⇒ [page 170](#)

- 8 - Internal microphone - R74-
 - ☐ Removing and installing ⇒ [page 170](#)

- 9 - Trim

- 10 - Bolt
 - ☐ 4x



□ 1 Nm

11 - Control unit 1 for information electronics - J794-

□ Pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

□ Removing and installing ⇒ [page 18](#)

12 - Bolt

□ 3 Nm

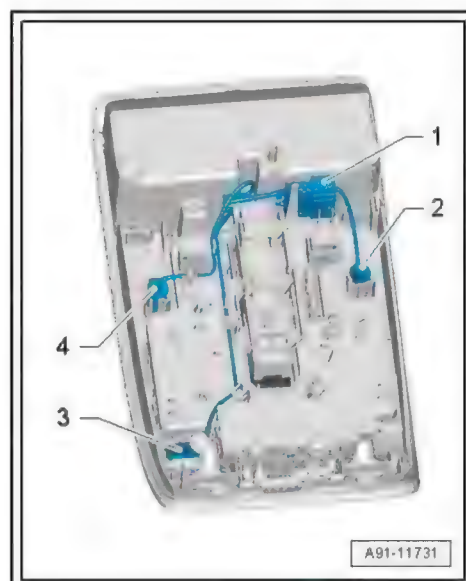
13 - Control unit 1 for information electronics - J794-

6.3 Exploded view - microphone unit

One of the microphones (internal microphone - R74-) is connected directly to the digital sound package control unit - J525- . The other microphones are connected to the control unit 1 for information electronics - J794- .

Microphone unit in front roof module - R164-

- 1 - 6-pin connector - T6e-
- 2 - Microphone (blue) to control unit 1 for information electronics - J794-
- 3 - Microphone (black) to digital sound package control unit - J525-
- 4 - Microphone (grey) to control unit 1 for information electronics - J794-



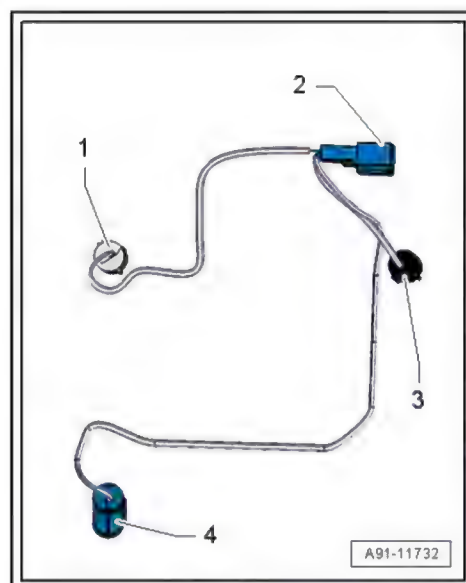
Pin assignment

Left-hand drive vehicles:

- 1 - Front left microphone - R140- , grey
- 2 - 6-pin connector - T6e- : pins 1-2: front left microphone - R140- (grey), pins 3-4: internal microphone - R74- (black), pins 5-6: front right microphone - R141- (blue)
- 3 - Front right microphone - R141- , blue
- 4 - Internal microphone - R74- , black

Right-hand drive vehicles:

- 1 - Front right microphone - R141- , blue
- 2 - 6-pin connector - T6e- : pins 1-2: front right microphone - R141- (blue), pins 3-4: internal microphone - R74- (black), pins 5-6: front left microphone - R140- (grey)
- 3 - Front left microphone - R140- , grey
- 4 - Internal microphone - R74- , black



Removing and installing microphone unit in front roof module - R164- ⇒ [page 170](#)

6.4 Removing and installing microphone unit in front roof module - R164-

The microphone unit in front roof module - R164- in the front interior light - W1- can only be renewed as a complete unit.

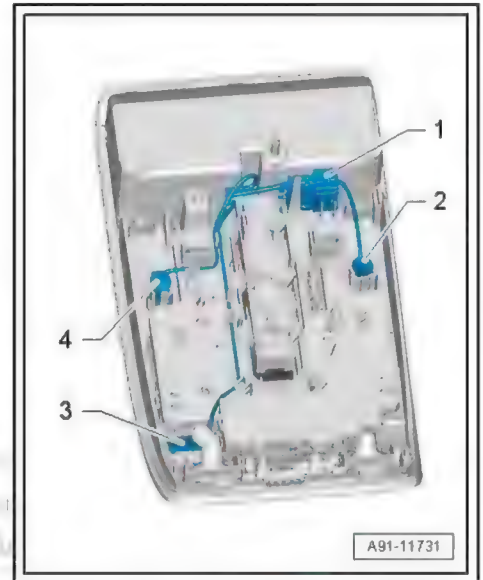


Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove front interior light - W1- ➔ Electrical system; Rep. gr. 96 ; Controls; Removing and installing interior light/reading light (front) .
- Unclip connector -1- from bracket in front interior light - W1- and disconnect.
- Pry individual microphones -2-, -3- and -4- out of retainer.

Installing

- Install in reverse sequence of removal.



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6.5 Removing and installing aerial amplifier for mobile telephone - R86-

⇒ [“6.5.1 Removing and installing aerial amplifier for mobile telephone R86 - up to model year 2014”, page 171](#)

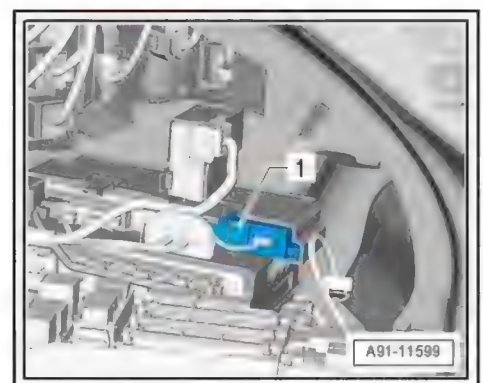
⇒ [“6.5.2 Removing and installing aerial amplifier for mobile telephone R86 - from model year 2015 onwards”, page 172](#)

6.5.1 Removing and installing aerial amplifier for mobile telephone - R86- - up to model year 2014

The aerial amplifier for mobile telephone - R86- -1- is located behind the luggage compartment trim (right-side).

Removing

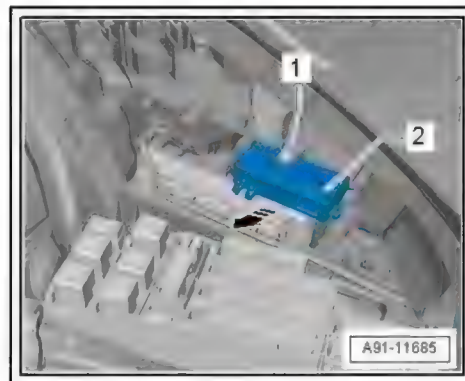
- Switch off ignition and all electrical equipment, and remove ignition key.
- Open right storage compartment in luggage compartment.



- Release and unplug connectors at aerial amplifier for mobile telephone - R86- -2-.
- Push lug -1- upwards and pull aerial amplifier for mobile telephone - R86- -2- in direction of -arrow- out of bracket.

Installing

- Install in reverse sequence of removal.



6.5.2 Removing and installing aerial amplifier for mobile telephone - R86- - from model year 2015 onwards

Special tools and workshop equipment required

- ♦ Torque screwdriver - V.A.G 1624-



The aerial amplifier for mobile telephone - R86- is located behind the luggage compartment trim (left-side).

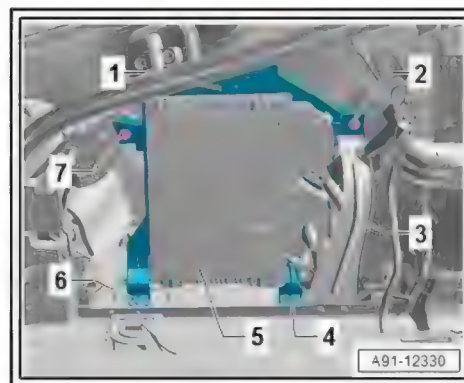
Removing

- Switch off ignition and all electrical equipment, and remove ignition key.

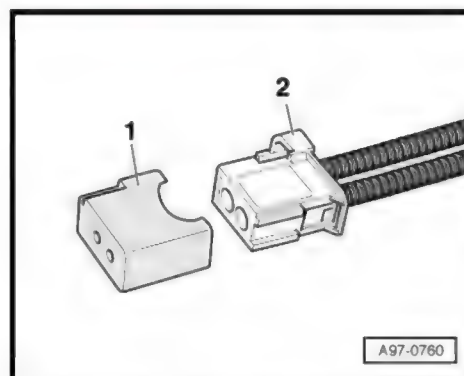
First remove bracket together with digital sound package control unit - J525- / TV tuner - R78- .

- Remove luggage compartment side trim (left-side) ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing luggage compartment side trim .
- If fitted, remove lever for towing bracket ⇒ General body repairs, exterior; Rep. gr. 66 ; Towing bracket; Exploded view - towing bracket .

- Remove nuts -4, 6 and 7- and bolt -2- from bracket -1-.
- Remove brace -3-.
- Pivot digital sound package control unit - J525- -5- together with bracket -1- into luggage compartment.
- If fitted, unplug connectors on TV tuner - R78- .



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



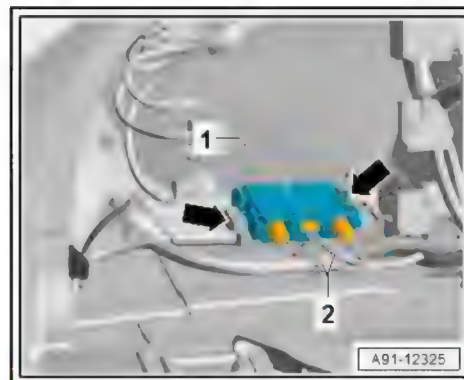
- Release and unplug connectors -2- on aerial amplifier for mobile telephone - R86- -1-.
- Press lugs -arrows- and pull aerial amplifier for mobile telephone - R86- -1- out of bracket.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["8.2.3 Overview of fitting locations - TV system, from model year 2015 onwards", page 221](#)



6.6 Removing and installing telephone bracket - R126-

⇒ ["6.6.1 Removing and installing telephone bracket R126 \(front\) - up to model year 2014", page 173](#)

⇒ ["6.6.2 Removing and installing telephone bracket R126 \(front\) - from model year 2015 onwards", page 174](#)

⇒ ["6.6.3 Removing and installing telephone bracket R126 \(front\) - from model year 2017 onwards", page 175](#)

6.6.1 Removing and installing telephone bracket - R126- (front) - up to model year 2014

Special tools and workshop equipment required

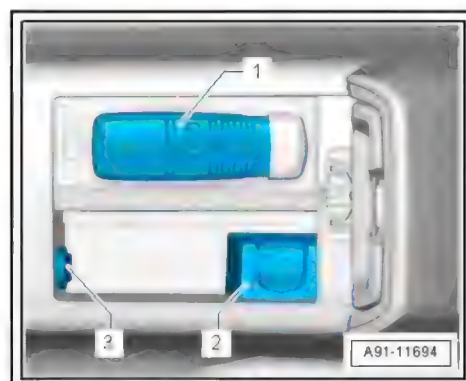
◆ Torque screwdriver - V.A.G 1624-



The telephone bracket - R126- (front) -1- is located beneath the front centre armrest.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove telephone handset - R37- / mobile telephone - R54- .
- Remove centre console storage box ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console storage box (front) .
- Release and unplug connector.
- Remove bolts -3-.
- Lift telephone bracket - R126- -2- out of storage box -1-.

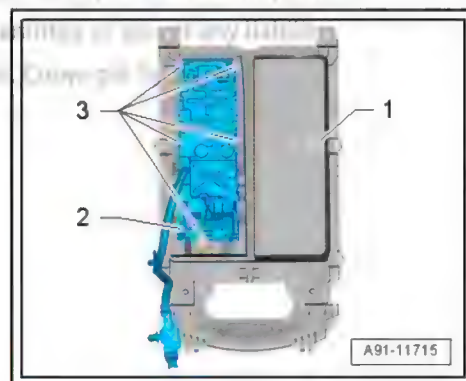


Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["6.2.1 Overview of fitting locations - telephone system, up to model year 2014", page 168](#)



6.6.2 Removing and installing telephone bracket - R126- (front) - from model year 2015 onwards

Special tools and workshop equipment required

◆ Torque screwdriver - V.A.G 1624-





The telephone bracket - R126- (front) -1- is located beneath the front centre armrest.

Removing

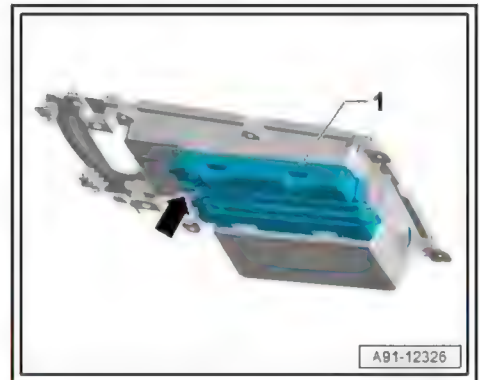
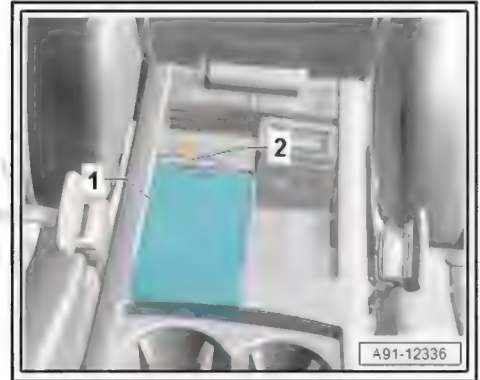
- Switch off ignition and all electrical equipment, and remove ignition key.
- Take out mobile telephone - R54- .
- Remove centre console storage box. ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console storage box (front) .
- Release and unplug connectors.
- Remove bolt -arrow-.
- Take telephone bracket - R126- -1- off storage box.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["6.2.2 Overview of fitting locations - telephone system, from model year 2015 onwards", page 169](#)



6.6.3 Removing and installing telephone bracket - R126- (front) - from model year 2017 onwards

Special tools and workshop equipment required

- ◆ Removal tool - T40388-

The telephone bracket - R126- is located under the front centre armrest.

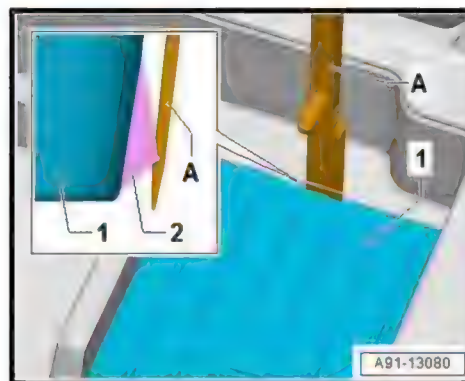
Removing

- Switch off ignition and all electrical equipment. Store ignition key outside of vehicle.
- Take out mobile telephone - R54- .

Telephone bracket - R126- -1- is wedged in storage compartment.

There is a small recess in the sealing lip at the location where the removal tool - T40388- must be inserted.

- Carefully press sealing lip on telephone bracket - R126- to side by inserting removal tool - T40388- -A- vertically from above, as shown.
- This disengages lug -2-, which then engages in groove on removal tool - T40388- -A-.
- Pull removal tool - T40388- -A- back out upwards, keeping it vertical, and pull telephone bracket - R126- -1- out of storage compartment.
- Telephone bracket - R126- is wedged in on opposite side. Pivot telephone bracket - R126- -1- out of storage compartment.
- Release and unplug electrical connectors at telephone bracket - R126- -1-.



Installing

Installation is carried out in reverse sequence.

6.7 Pin assignment

⇒ ["6.7.1 Pin assignment for mobile phone pre-installation, RMC, 9ZF", page 176](#)

⇒ ["6.7.2 Pin assignment for mobile phone pre-installation, MMI, 9ZF", page 180](#)

⇒ ["6.7.3 Pin assignment for Bluetooth car phone, MMI, 9ZW", page 183](#)

⇒ ["6.7.4 Pin assignment for Bluetooth hands-free system, RMC, 9ZX", page 187](#)

⇒ ["6.7.5 Pin assignment for Bluetooth hands-free system, MMI, 9ZX", page 191](#)

⇒ ["6.7.6 Pin assignment for telephone bracket R126 , from model year 2015 onwards", page 194](#)

6.7.1 Pin assignment for mobile phone pre-installation, RMC, 9ZF



1 - DAB connection from aerial amplifier 3 - R112- , digital radio aerial - R183- , Europe/ rest-of-world and QV3 only

- SAT connection from roof aerial - R216- , satellite aerial - R170- , QV8 and USA only

2 - GPS connection from roof aerial - R216-

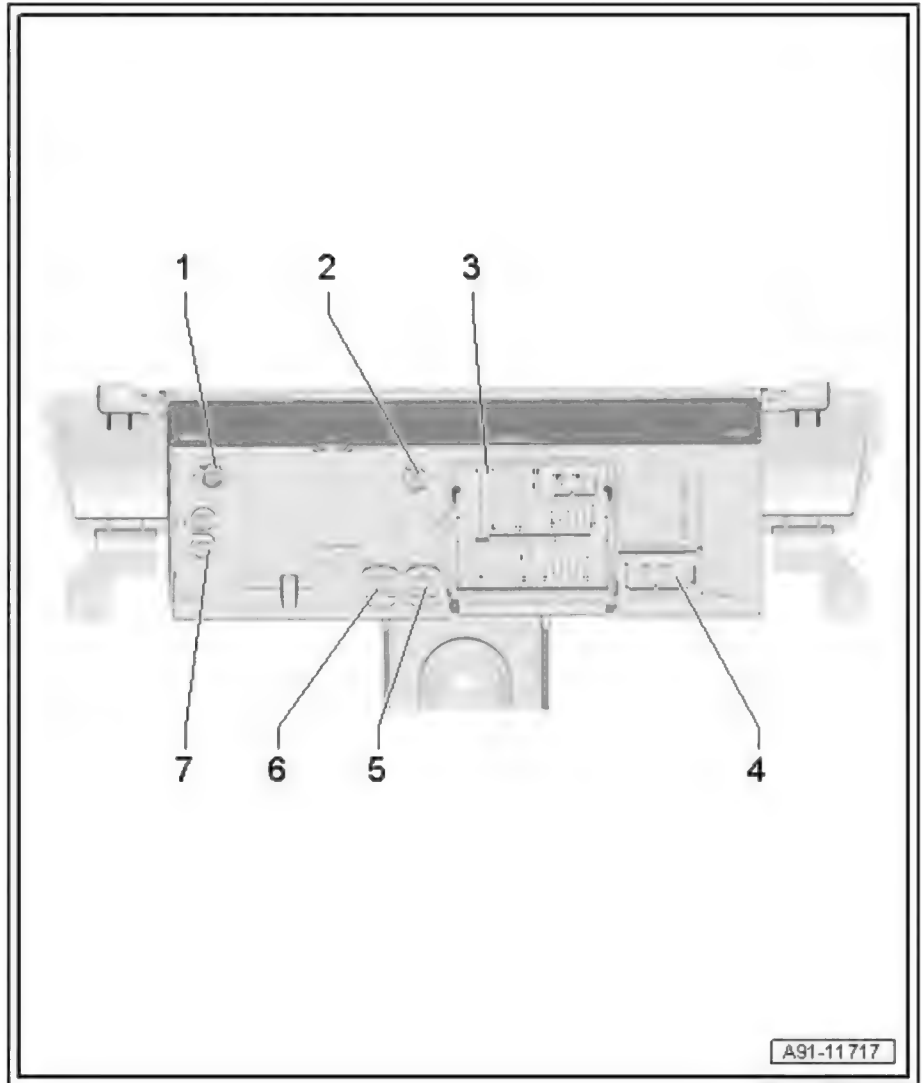
3 - Connection block with four multi-pin connectors

4 - MOST bus

5 - 4-pin connector - T4z- to connection for external audio sources - R199-

6 - 4-pin connector - T4df- to display unit for front information display and operating unit - J685-

7 - Aerial connection, AM/FM/ FM2



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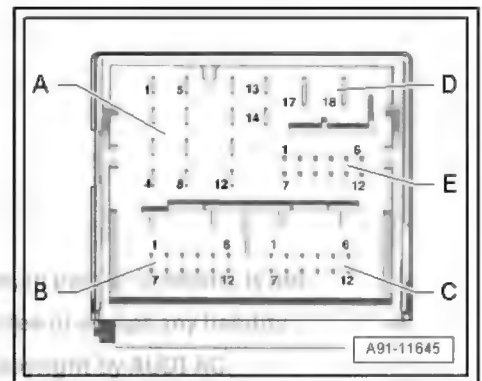
Note

Contacts which are not listed are not used.

3 - Connection block with four multi-pin connectors

A - 8-pin connector - T8e-

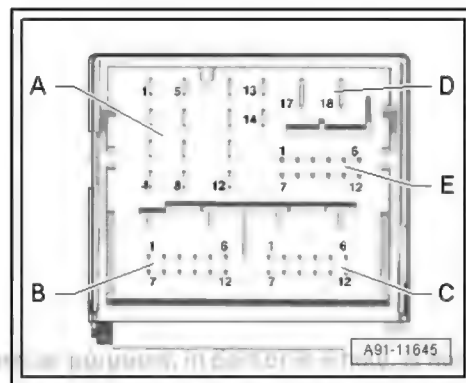
- 1 - Loudspeaker (+), rear right
- 2 - Loudspeaker (+), front right
- 3 - Loudspeaker (+), front left
- 4 - Loudspeaker (+), rear left
- 5 - Loudspeaker (-), rear right
- 6 - Loudspeaker (-), front right
- 7 - Loudspeaker (-), front left
- 8 - Loudspeaker (-), rear left



A91-11645

B - 12-pin connector - T12c-

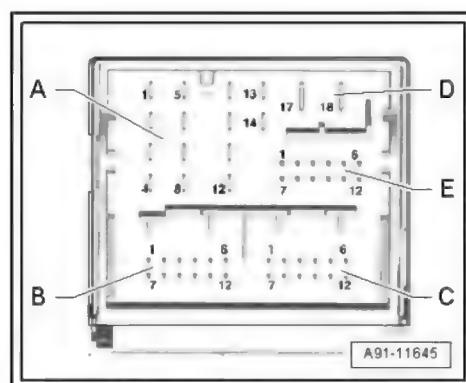
- 1 - Data from multimedia system operating unit - E380-
- 2 - RES BT multimedia system operating unit - E380-
- 3 - Not used
- 4 - Microphone input (+) from microphone unit in front roof module - R164-, front left microphone - R140-
- 5 - FBAS wire (-) from reversing camera system control unit - J772-
- 6 - DIAG signal from telephone bracket - R126-
- 7 - Data to multimedia system operating unit - E380-
- 8 - Wake-up multimedia system operating unit - E380-
- 9 - Res HU to multimedia system operating unit - E380-
- 10 - Not used
- 11 - FBAS wire (+) from reversing camera system control unit - J772-
- 12 - Microphone input (-) from microphone unit in front roof module - R164-, front left microphone - R140-



C - 12-pin connector - T12e-

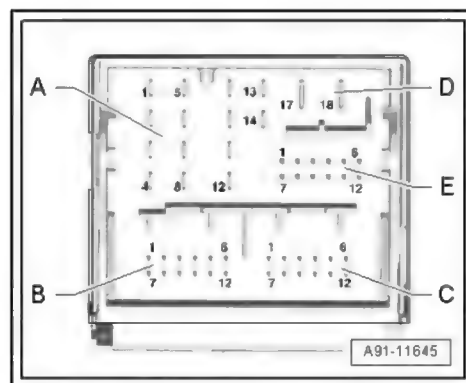
All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB, +5 V
- 4 - USB, earth
- 5 - iPod, ACC power
- 6 - Detect
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data



D - 8-pin connector - T8f-

- 9 - Subwoofer - R211-
- 10 - Centre loudspeaker - R208-
- 13 - Subwoofer - R211-
- 14 - Centre loudspeaker - R208-
- 17 - Terminal 31
- 18 - Terminal 30

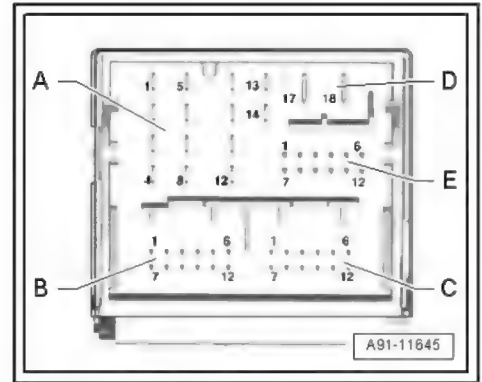




E - 12-pin connector - T12d-

7 - Open circuit diagnostic lead

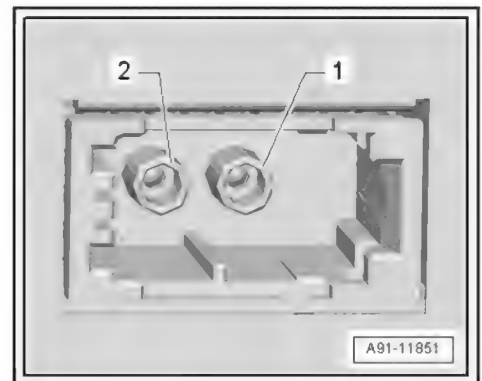
12 - Switch-on signal to telephone bracket - R126- / aerial amplifier for mobile telephone - R86-



4 - MOST bus

1 - Output

2 - Input



5 - 4-pin connector - T4z-

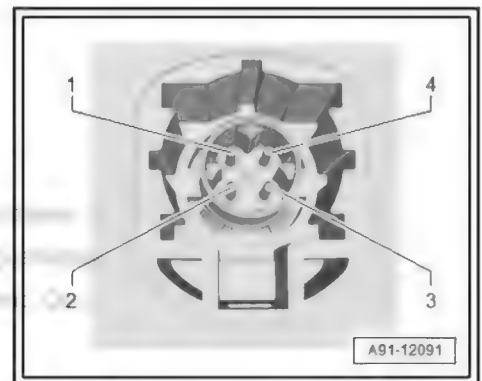
All pins are connected to the connection for external audio sources - R199- .

1 - D (+)

2 - iPod detected

3 - D (-)

4 - Earth



6 - 4-pin connector - T4df-

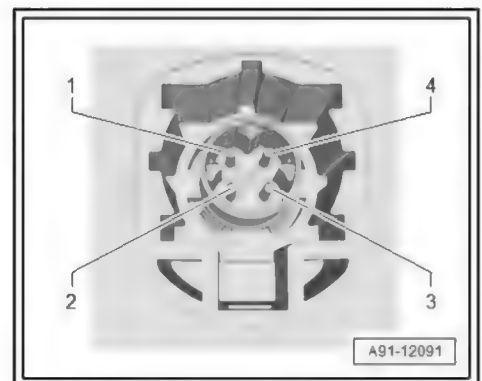
All pins are connected to the display unit for front information display and operating unit control unit - J685- .

1 - LVDS (-)

2 - LIN

3 - LVDS (+)

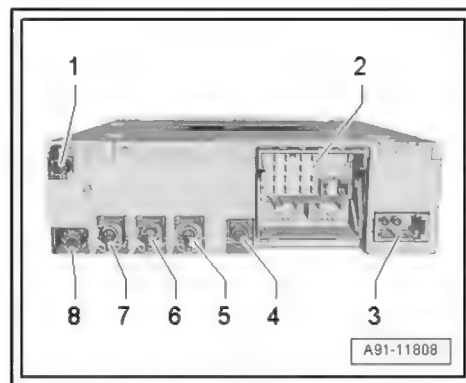
4 - Earth



6.7.2 Pin assignment for mobile phone pre-installation, MMI, 9ZF

Control unit 1 for information electronics - J794-

- 1 - GSM connection from roof aerial - R216-
- 2 - Connection block with four multi-pin connectors
- 3 - MOST bus
- 4 - FBAS input from TV tuner - R78- / DVD changer - R161-
- 5 - 4-pin connector - T4dc- to display unit for front information display and operating unit control unit - J685-
- 6 - 4-pin connector - T4aa- to connection for external audio sources - R199-
- 7 - Not used
- 8 - GPS connection from roof aerial - R216-



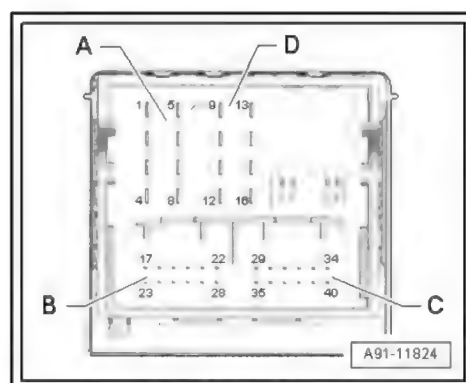
Note

Contacts which are not listed are not used.

2 - Connection block with four multi-pin connectors

A - 8-pin connector - T8h-

- 1 - Not used
- 2 - Not used
- 3 - Wake-up to multimedia system operating unit - E380-
- 4 - Not used
- 5 - Switch-on signal to telephone bracket - R126- / aerial amplifier for mobile telephone - R86-
- 6 - Res MU to multimedia system operating unit - E380-
- 7 - Open circuit diagnostic lead
- 8 - Not used





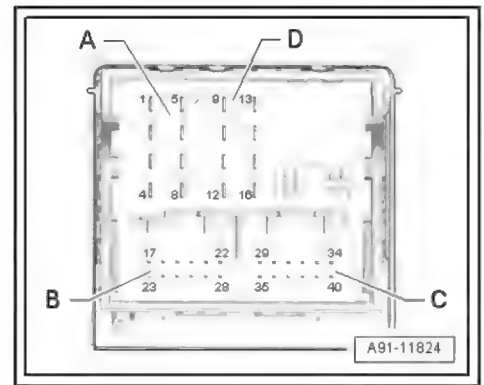
B - 12-pin connector - T12g-

Left-hand drive vehicle

- 1 - Not used
- 2 - Microphone input (+) from front right microphone - R141- , microphone unit in front roof module - R164-
- 3 - Microphone input (-) from front right microphone - R141- , microphone unit in front roof module - R164-
- 4 - Not used
- 5 - FBAS wire (-) from reversing camera system control unit - J772- / control unit for overhead view camera - J928-
- 6 - Not used
- 7 - Not used
- 8 - Microphone input (+) from front left microphone - R140- , microphone unit in front roof module - R164-
- 9 - Microphone input (-) from front left microphone - R140- , microphone unit in front roof module - R164-
- 10 - Not used
- 11 - FBAS wire (+) from reversing camera system control unit - J772- / control unit for overhead view camera - J928-
- 12 - Not used

Right-hand drive vehicle

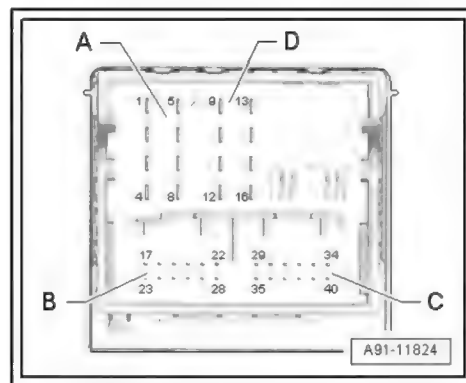
- 1 - Not used
- 2 - Microphone input (+) from front left microphone - R140- , microphone unit in front roof module - R164-
- 3 - Microphone input (-) from front left microphone - R140- , microphone unit in front roof module - R164-
- 4 - Not used
- 5 - FBAS wire (-) from reversing camera system control unit - J772- / control unit for overhead view camera - J928-
- 6 - Not used
- 7 - Not used
- 8 - Microphone input (+) from front right microphone - R141- , microphone unit in front roof module - R164-
- 9 - Microphone input (-) from front right microphone - R141- , microphone unit in front roof module - R164-
- 10 - Not used
- 11 - FBAS wire (+) from reversing camera system control unit - J772- / control unit for overhead view camera - J928-
- 12 - Not used



C - 12-pin connector - T12f-

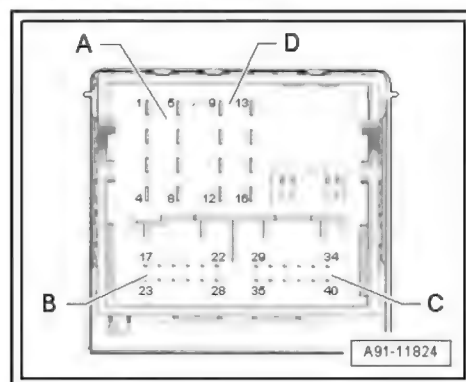
All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB, +5 V
- 4 - USB, earth
- 5 - iPod, ACC power
- 6 - Detect
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data



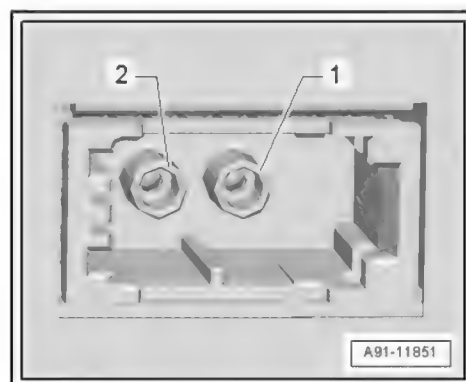
D - 8-pin connector - T8g-

- 9 - Switch-on signal to telephone bracket - R126-
- 10 - Data from multimedia system operating unit - E380-
- 11 - Data to multimedia system operating unit - E380-
- 12 - Terminal 31
- 13 - DIAG signal from telephone bracket - R126-
- 14 - Res BT from multimedia system operating unit - E380-
- 15 - Terminal 30



3 - MOST bus

- 1 - Output
- 2 - Input

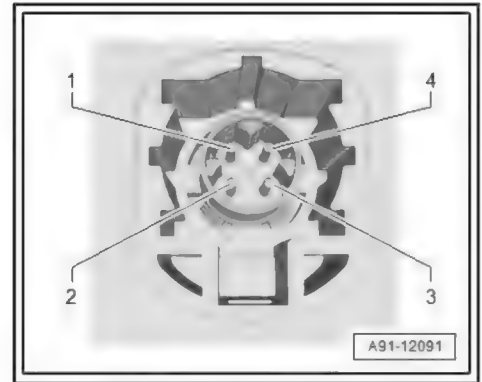




5 - 4-pin connector - T4aa-

All pins are connected to the connection for external audio sources - R199- .

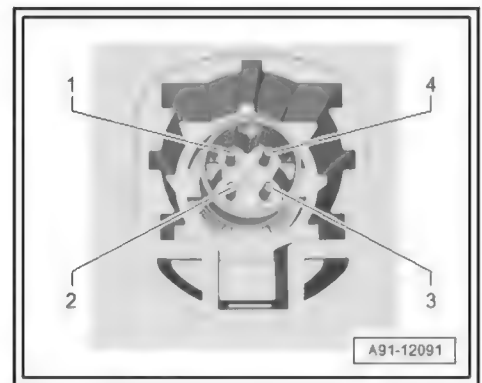
- 1 - D (+)
- 2 - iPod detected
- 3 - D (-)
- 4 - Earth



6 - 4-pin connector - T4dc-

All pins are connected to the display unit for front information display and operating unit control unit - J685- .

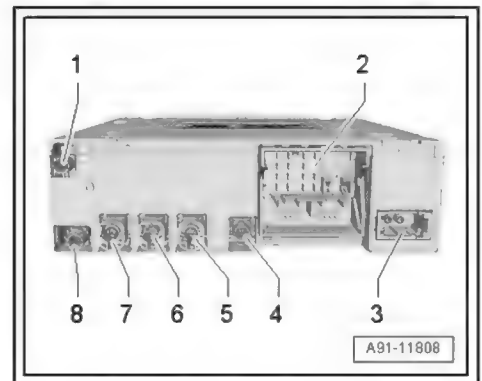
- 1 - LVDS (-)
- 2 - LIN
- 3 - LVDS (+)
- 4 - Earth



6.7.3 Pin assignment for Bluetooth car phone, MMI, 9ZW

Control unit 1 for information electronics - J794-

- 1 - GSM connection from roof aerial - R216-
- 2 - Connection block with four multi-pin connectors
- 3 - MOST bus
- 4 - FBAS input from TV tuner - R78- / DVD changer - R161-
- 5 - 4-pin connector - T4dc- to display unit for front information display and operating unit control unit - J685-
- 6 - 4-pin connector - T4aa- to connection for external audio sources - R199-
- 7 - Not used
- 8 - GPS connection from roof aerial - R216-



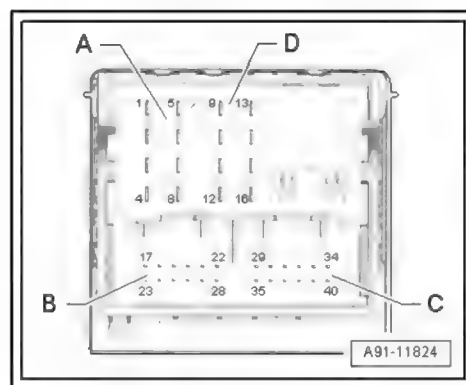
with
Note

Contacts which are not listed are not used.

- 2 - Connection block with four multi-pin connectors

A - 8-pin connector - T8h-

- 1 - Not used
- 2 - Not used
- 3 - Wake-up to multimedia system operating unit - E380-
- 4 - Not used
- 5 - Not used
- 6 - Res MU to multimedia system operating unit - E380-
- 7 - Open circuit diagnostic lead
- 8 - Not used



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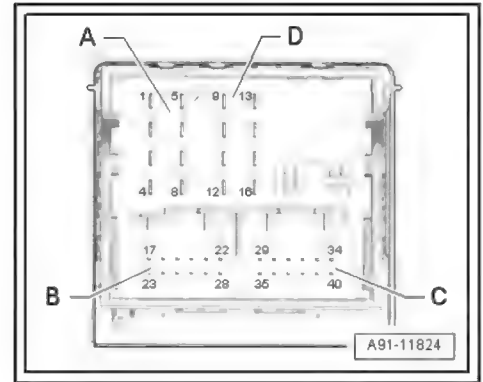
B - 12-pin connector - T12g-

Left-hand drive vehicle

- 1 - Not used
- 2 - Microphone input (+) from front right microphone - R141- , microphone unit in front roof module - R164-
- 3 - Microphone input (-) from front right microphone - R141- , microphone unit in front roof module - R164-
- 4 - Not used
- 5 - FBAS wire (-) from reversing camera system control unit - J772- / control unit for overhead view camera - J928-
- 6 - Not used
- 7 - Not used
- 8 - Microphone input (+) from front left microphone - R140- , microphone unit in front roof module - R164-
- 9 - Microphone input (-) from front left microphone - R140- , microphone unit in front roof module - R164-
- 10 - Not used
- 11 - FBAS wire (+) from reversing camera system control unit - J772- / control unit for overhead view camera - J928-
- 12 - Not used

Right-hand drive vehicle

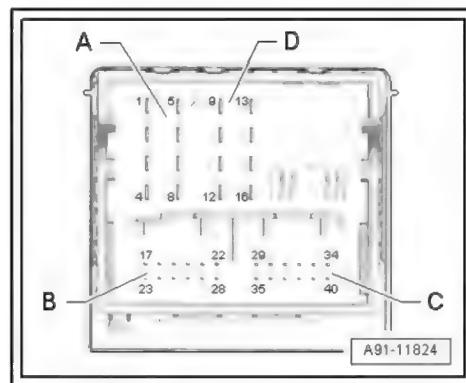
- 1 - Not used
- 2 - Microphone input (+) from front left microphone - R140- , microphone unit in front roof module - R164-
- 3 - Microphone input (-) from front left microphone - R140- , microphone unit in front roof module - R164-
- 4 - Not used
- 5 - FBAS wire (-) from reversing camera system control unit - J772- / control unit for overhead view camera - J928-
- 6 - Not used
- 7 - Not used
- 8 - Microphone input (+) from front right microphone - R141- , microphone unit in front roof module - R164-
- 9 - Microphone input (-) from front right microphone - R141- , microphone unit in front roof module - R164-
- 10 - Not used
- 11 - FBAS wire (+) from reversing camera system control unit - J772- / control unit for overhead view camera - J928-
- 12 - Not used



C - 12-pin connector - T12f-

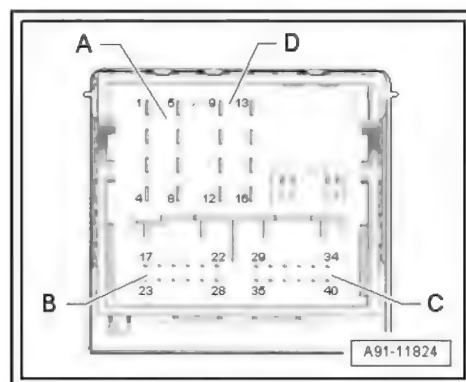
All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB, +5 V
- 4 - USB, earth
- 5 - iPod, ACC power
- 6 - Detect
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data



D - 8-pin connector - T8g-

- 9 - Switch-on signal to telephone bracket - R126-
- 10 - Data from multimedia system operating unit - E380-
- 11 - Data to multimedia system operating unit - E380-
- 12 - Terminal 31
- 14 - Res BT from multimedia system operating unit - E380-
- 15 - Terminal 30

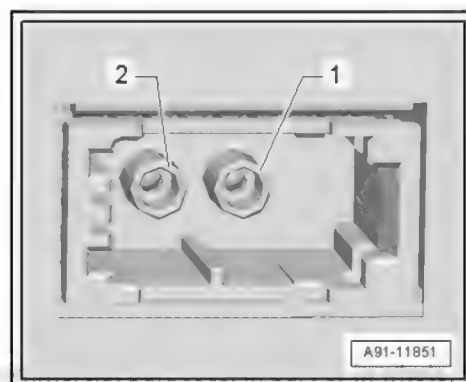


3 - MOST bus

- 1 - Output
- 2 - Input



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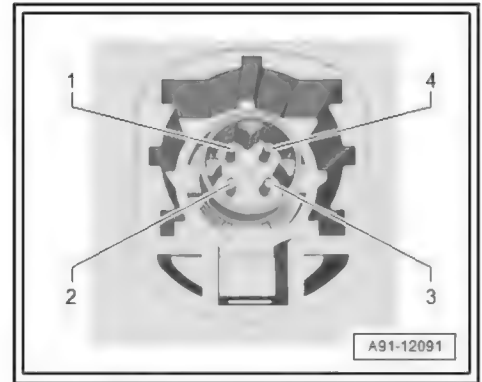




5 - 4-pin connector - T4aa-

All pins are connected to the connection for external audio sources - R199- .

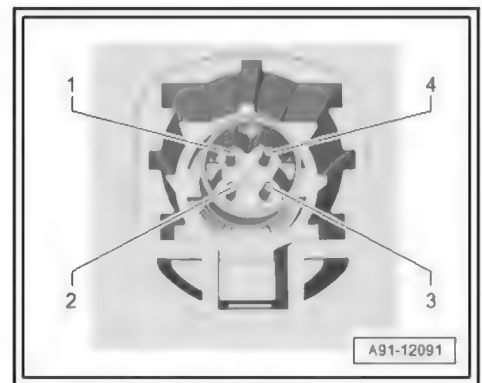
- 1 - D (+)
- 2 - iPod detected
- 3 - D (-)
- 4 - Earth



6 - 4-pin connector - T4dc-

All pins are connected to the display unit for front information display and operating unit control unit - J685- .

- 1 - LVDS (-)
- 2 - LIN
- 3 - LVDS (+)
- 4 - Earth



6.7.4 Pin assignment for Bluetooth hands-free system, RMC, 9ZX

Control unit 1 for information electronics - J794-



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1 - DAB connection from aerial amplifier 3 - R112- , digital radio aerial - R183- , Europe/ rest-of-world and QV3 only

- SAT connection from roof aerial - R216- , satellite aerial - R170- , QV8 and USA only

2 - GPS connection from roof aerial - R216-

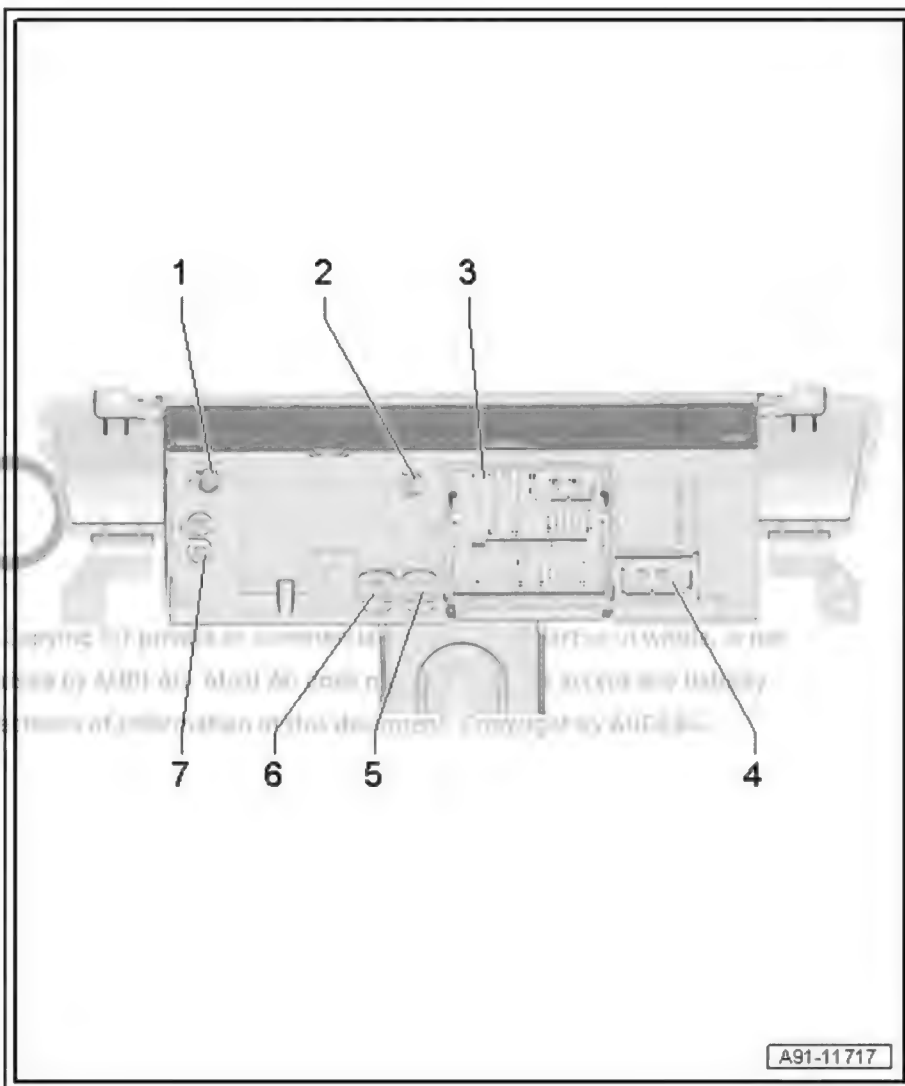
3 - Connection block with four multi-pin connectors

4 - MOST bus

5 - 4-pin connector - T4z- to connection for external audio sources - R199-

6 - 4-pin connector - T4df- to display unit for front information display and operating unit control unit - J685-

7 - Aerial connection, AM/FM/ FM2



A91-11717



Note

Contacts which are not listed are not used.

3 - Connection block with four multi-pin connectors

A - 8-pin connector - T8e-

1 - Loudspeaker (+), rear right

2 - Loudspeaker (+), front right

3 - Loudspeaker (+), front left

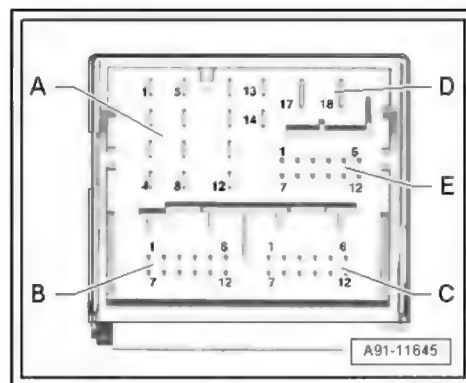
4 - Loudspeaker (+), rear left

5 - Loudspeaker (-), rear right

6 - Loudspeaker (-), front right

7 - Loudspeaker (-), front left

8 - Loudspeaker (-), rear left

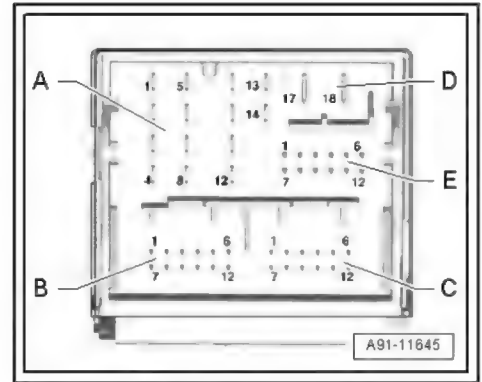


A91-11645



B - 12-pin connector - T12c-

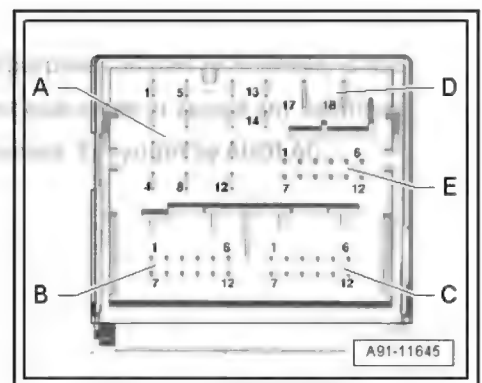
- 1 - Data from multimedia system operating unit - E380-
- 2 - RES BT multimedia system operating unit - E380-
- 3 - Not used
- 4 - Microphone input (+) from microphone unit in front roof module - R164- , front left microphone - R140-
- 5 - FBAS wire (-) from reversing camera system control unit - J772-
- 6 - Not used
- 7 - Data to multimedia system operating unit - E380-
- 8 - Wake-up multimedia system operating unit - E380-
- 9 - Res HU to multimedia system operating unit - E380-
- 10 - Not used
- 11 - FBAS wire (+) from reversing camera system control unit - J772-
- 12 - Microphone input (-) from microphone unit in front roof module - R164- , front left microphone - R140-



C - 12-pin connector - T12e-

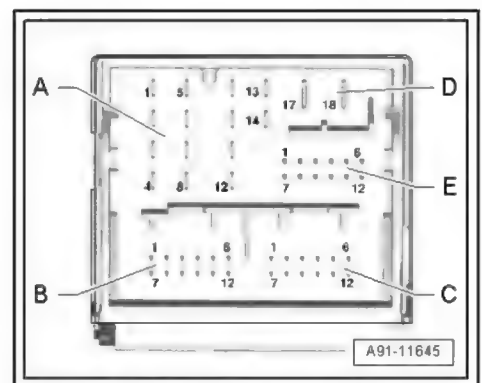
All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB, +5 V
- 4 - USB, earth
- 5 - iPod, ACC power
- 6 - Detect
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data



D - 8-pin connector - T8f-

- 9 - Subwoofer - R211-
- 10 - Centre loudspeaker - R208-
- 13 - Subwoofer - R211-
- 14 - Centre loudspeaker - R208-
- 17 - Terminal 31
- 18 - Terminal 30



E - 12-pin connector - T12d-

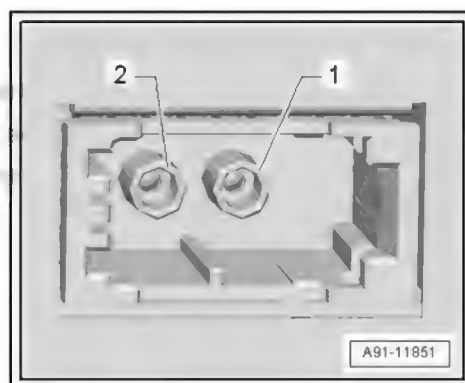
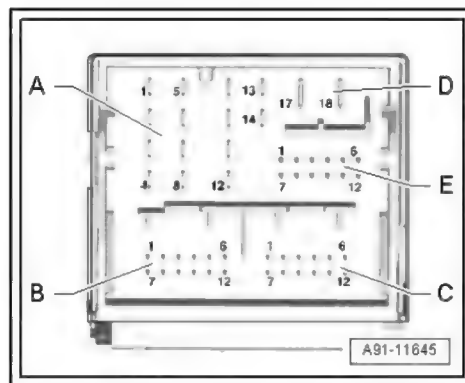
7 - Open circuit diagnostic lead



4 - MOST bus

1 - Output

2 - Input



5 - 4-pin connector - T4z-

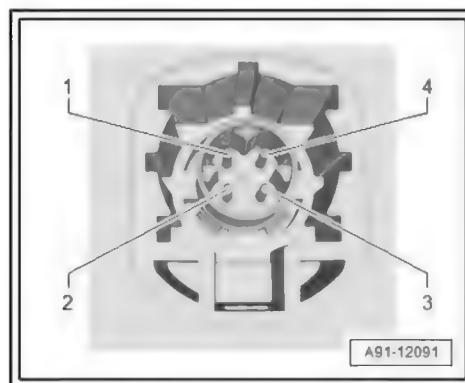
All pins are connected to the connection for external audio sources - R199- .

1 - D (+)

2 - iPod detected

3 - D (-)

4 - Earth



6 - 4-pin connector - T4df-

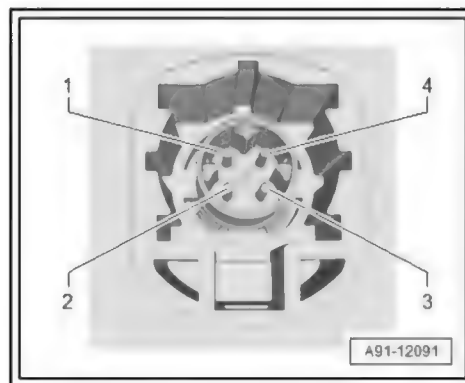
All pins are connected to the display unit for front information display and operating unit control unit - J685- .

1 - LVDS (-)

2 - LIN

3 - LVDS (+)

4 - Earth

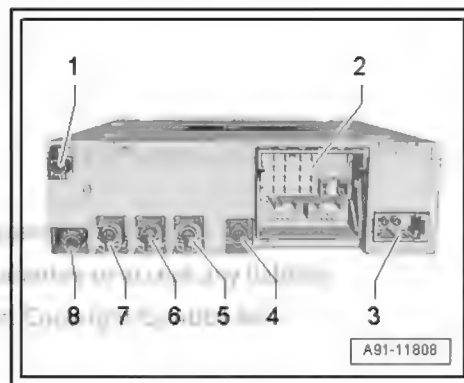




6.7.5 Pin assignment for Bluetooth hands-free system, MMI, 9ZX

Control unit 1 for information electronics - J794-

- 1 - Not used
- 2 - Connection block with four multi-pin connectors
- 3 - MOST bus
- 4 - FBAS input from TV tuner - R78- / DVD changer - R161-
- 5 - 4-pin connector - T4dc- to display unit for front information display and operating unit control unit - J685-
- 6 - 4-pin connector - T4aa- to connection for external audio sources - R199-
- 7 - Not used
- 8 - GPS connection from roof aerial - R216-



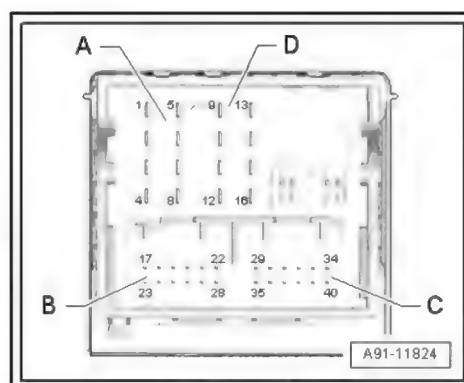
Note

Contacts which are not listed are not used.

2 - Connection block with four multi-pin connectors

A - 8-pin connector - T8h-

- 1 - Not used
- 2 - Not used
- 3 - Wake-up to multimedia system operating unit - E380-
- 4 - Not used
- 5 - Not used
- 6 - Res MU to multimedia system operating unit - E380-
- 7 - Open circuit diagnostic lead
- 8 - Not used



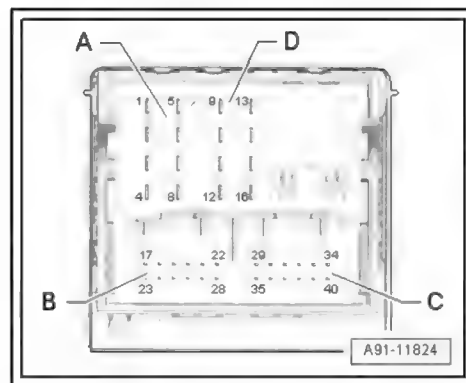
B - 12-pin connector - T12g-

Left-hand drive vehicle

- 1 - Not used
- 2 - Microphone input (+) from front right microphone - R141- , microphone unit in front roof module - R164-
- 3 - Microphone input (-) from front right microphone - R141- , microphone unit in front roof module - R164-
- 4 - Not used
- 5 - FBAS wire (-) from reversing camera system control unit - J772- / control unit for overhead view camera - J928-
- 6 - Not used
- 7 - Not used
- 8 - Microphone input (+) from front left microphone - R140- , microphone unit in front roof module - R164-
- 9 - Microphone input (-) from front left microphone - R140- , microphone unit in front roof module - R164-
- 10 - Not used
- 11 - FBAS wire (+) from reversing camera system control unit - J772- / control unit for overhead view camera - J928-
- 12 - Not used

Right-hand drive vehicle

- 1 - Not used
- 2 - Microphone input (+) from front left microphone - R140- , microphone unit in front roof module - R164-
- 3 - Microphone input (-) from front left microphone - R140- , microphone unit in front roof module - R164-
- 4 - Not used
- 5 - FBAS wire (-) from reversing camera system control unit - J772- / control unit for overhead view camera - J928-
- 6 - Not used
- 7 - Not used
- 8 - Microphone input (+) from front right microphone - R141- , microphone unit in front roof module - R164-
- 9 - Microphone input (-) from front right microphone - R141- , microphone unit in front roof module - R164-
- 10 - Not used
- 11 - FBAS wire (+) from reversing camera system control unit - J772- / control unit for overhead view camera - J928-
- 12 - Not used



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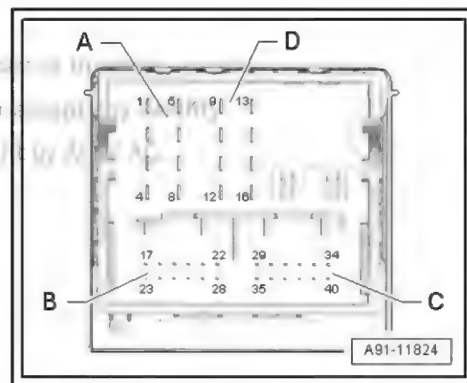
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C - 12-pin connector - T12f-

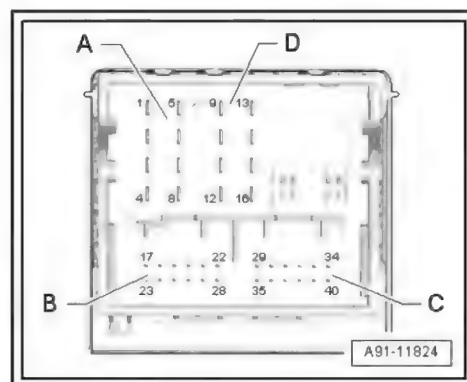
All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB, +5 V
- 4 - USB, earth
- 5 - iPod, ACC power
- 6 - Detect
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data



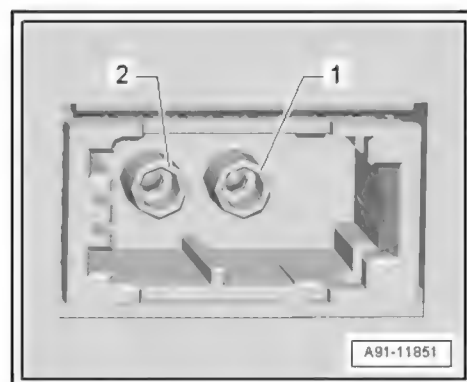
D - 8-pin connector - T8g-

- 10 - Data from multimedia system operating unit - E380-
- 11 - Data to multimedia system operating unit - E380-
- 12 - Terminal 31
- 14 - Res BT from multimedia system operating unit - E380-
- 15 - Terminal 30



3 - MOST bus

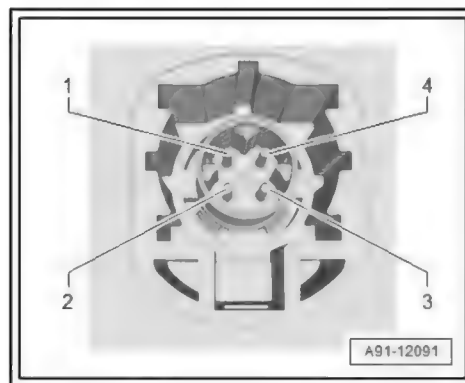
- 1 - Output
- 2 - Input



5 - 4-pin connector - T4aa-

All pins are connected to the connection for external audio sources - R199- .

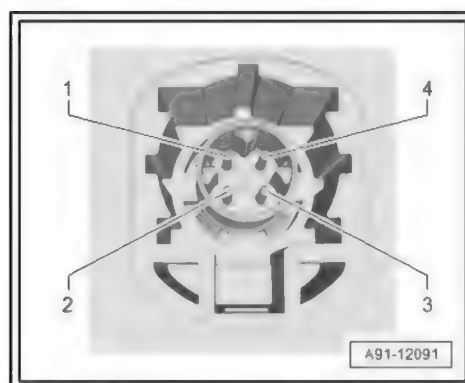
- 1 - D (+)
- 2 - iPod detected
- 3 - D (-)
- 4 - Earth



6 - 4-pin connector - T4dc-

All pins are connected to the display unit for front information display and operating unit control unit - J685- .

- 1 - LVDS (-)
- 2 - LIN
- 3 - LVDS (+)
- 4 - Earth



6.7.6 Pin assignment for telephone bracket - R126- , from model year 2015 onwards

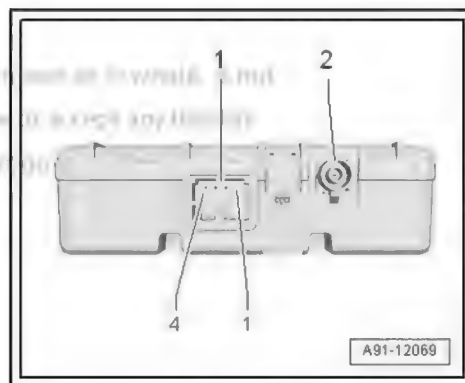
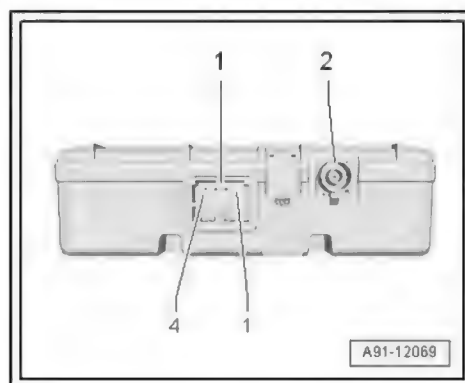
Telephone bracket - R126-

- 1 - 4-pin connector - T4cm-
- 2 - Aerial connection to aerial amplifier for mobile telephone - R86-



1 - 4-pin connector - T4cm-

- 1 - Terminal 30
- 2 - Switch-on signal from control unit 1 for information electronics - J794-
- 3 - Status signal to control unit 1 for information electronics - J794-
- 4 - Terminal 31





7 Navigation system

⇒ ["7.1 Layout - navigation system", page 195](#)

⇒ ["7.2 Overview of fitting locations - navigation system", page 204](#)

⇒ ["7.3 Pin assignment", page 207](#)

⇒ ["7.4 Removing and installing chip card reader control unit", page 212](#)

7.1 Layout - navigation system

⇒ ["7.1.1 Layout - navigation system, MMI navigation system, 7T2", page 195](#)

⇒ ["7.1.2 Layout - navigation system, MMI navigation system plus, 7T6, up to model year 2014", page 197](#)

⇒ ["7.1.3 Layout - navigation system, MMI navigation system plus, 7UG, from model year 2015 onwards", page 199](#)

⇒ ["7.1.4 Layout - navigation system, Japan", page 201](#)

7.1.1 Layout - navigation system, MMI navigation system, 7T2

The navigation system is part of the control unit 1 for information electronics - J794- in the dash panel.

The multimedia system operating unit - E380- is used for operation.

On versions with a navigation system, the navigation data are stored on an SD card.

7T2 - MMI navigation system

Control unit 1 for information electronics - J794- with integrated CD player/SD memory card readers/navigation system in dash panel

- ◆ Radio - R- integrated in control unit 1 for information electronics - J794- , 8DP
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Multimedia system operating unit - E380- in centre console, QW1
- ◆ CD changer - R41- in glove box, 7A2
- ◆ Connection for external audio sources - R199- in centre console, UF7
- ◆ Digital sound package control unit - J525- in luggage compartment (rear left)
- ◆ Sound systems: standard/BOSE, 9VD/8RY
- ◆ Bluetooth hands-free system, 9ZX
- ◆ Speech dialogue system, QH1

Optional equipment

- ◆ Mobile phone pre-installation, 9ZF
- ◆ Digital radio - R147- integrated in control unit 1 for information electronics - J794- , Europe/rest-of-world and QV3 only
- ◆ Satellite radio - R146- integrated in control unit 1 for information electronics - J794- , USA and QV8 only

1 - Roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - Control unit 1 for information electronics - J794- in dash panel

5 - Connection for external audio sources - R199- in centre console

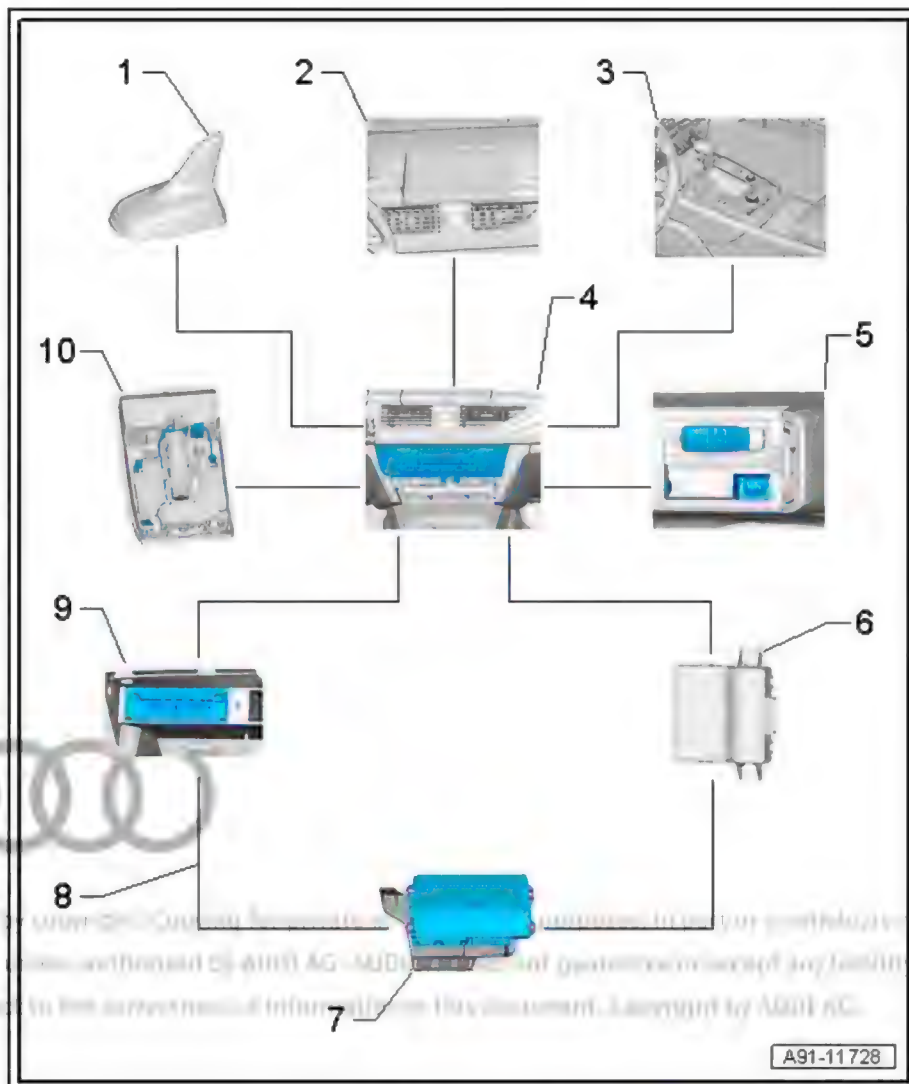
6 - Data bus diagnostic interface - J533- beneath rear seat bench

7 - Digital sound package control unit - J525- in luggage compartment (rear left)

8 - MOST bus

9 - CD changer - R41- in glove box

10 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-



Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A "fibre optic cable" is used as the connecting cable. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.



If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



7.1.2 Layout - navigation system, MMI navigation system plus, 7T6, up to model year 2014

The navigation system is part of the control unit 1 for information electronics - J794- in the dash panel.

The multimedia system operating unit - E380- is used for operation.

On versions with a navigation system plus, the navigation data are stored on an internal hard disk drive (HDD).

7T6 - MMI navigation system plus

Control unit 1 for information electronics - J794- with integrated CD player/DVD player/SD memory card readers/navigation system in dash panel

- ◆ Internal hard drive (HDD) to store navigation data and MP3 files
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Multimedia system operating unit - E380- in centre console, QW1
- ◆ DVD changer - R161- in glove box, 6G0
- ◆ Connection for external audio sources - R199- in centre console, UF7
- ◆ Digital sound package control unit - J525- in luggage compartment (rear left)
- ◆ Sound systems: standard/BOSE/Bang & Olufsen, 9VD/8RY/8RF
- ◆ Radio - R- in luggage compartment (rear left), 8YQ/8AJ
- ◆ TV tuner - R78- in luggage compartment (rear left), QU6/QU7
- ◆ Bluetooth hands-free system, 9ZX
- ◆ Speech dialogue system, QH1

Optional equipment

- ◆ Bluetooth car phone, 9ZW
- ◆ Digital radio - R147- integrated in control unit 1 for information electronics - J794- , Europe/rest-of-world and QV3 only
- ◆ Satellite radio - R146- integrated in control unit 1 for information electronics - J794- , USA and QV3 only

1 - Roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - Control unit 1 for information electronics - J794- in dash panel

5 - Telephone bracket - R126- / connection for external audio sources - R199- in centre console storage compartment

6 - MOST bus

7 - Data bus diagnostic interface - J533- beneath rear seat bench

8 - Digital sound package control unit - J525- in luggage compartment (rear left)

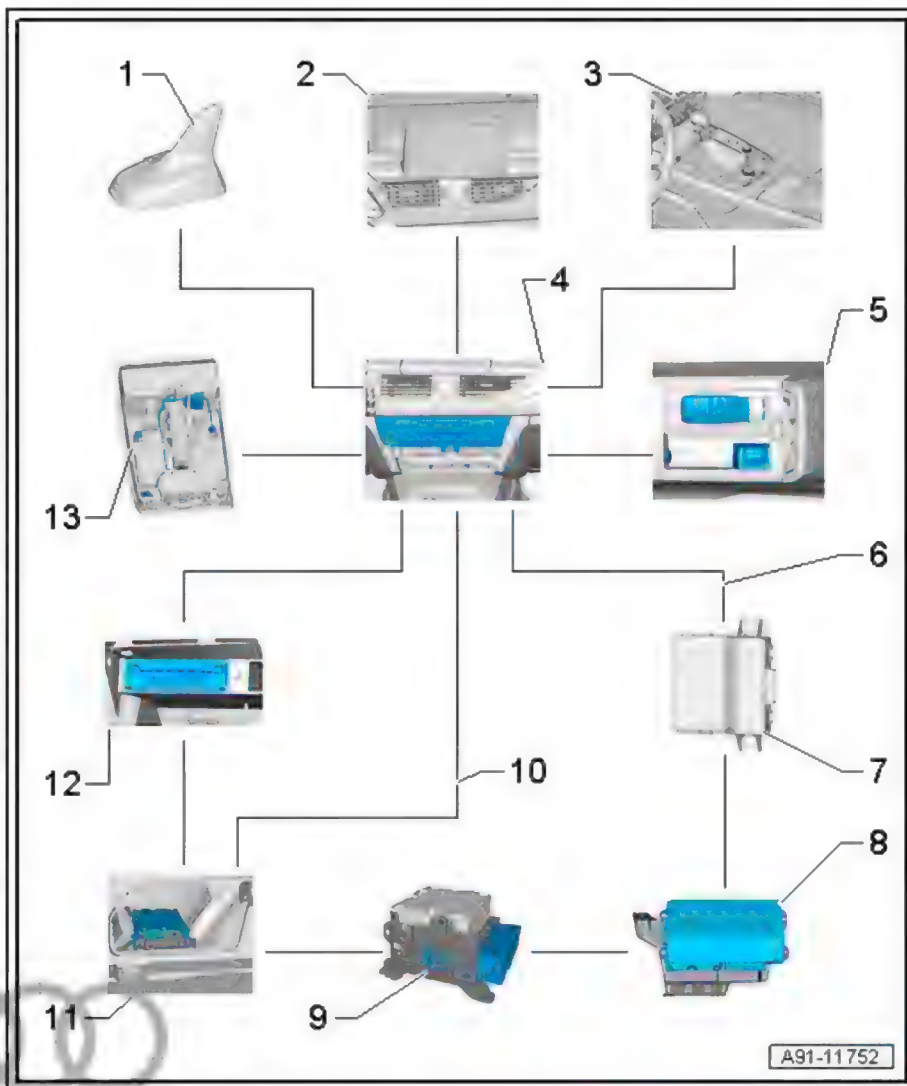
9 - Radio - R- in luggage compartment (rear left)

10 - FBAS wire

11 - TV tuner - R78- in luggage compartment (rear left)

12 - DVD changer - R161- in glove box

13 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-



Fault finding is performed via "Guided Fault Finding" ➔ Vehicle diagnostic tester.

Repairing aerial wiring ➔ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A "fibre optic cable" is used as the connecting cable. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.



If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



7.1.3 Layout - navigation system, MMI navigation system plus, 7UG, from model year 2015 onwards

The navigation system is part of the control unit 1 for information electronics - J794- in the glove box.

The multimedia system operating unit - E380- is used for operation.

On versions with a navigation system plus, the navigation data are stored on an internal hard disk drive (HDD).

7UG - MMI navigation system plus, from model year 2015 onwards

Control unit 1 for information electronics - J794- with integrated CD player/DVD player/SD memory card readers/navigation system in dash panel

- ◆ Internal hard drive (HDD) to store navigation data and MP3 files
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Multimedia system operating unit - E380- in centre console, QW1
- ◆ DVD changer - R161- in glove box, 6G2
- ◆ Connection for external audio sources - R199- in centre console storage compartment
- ◆ Digital sound package control unit - J525- in luggage compartment (rear left)
- ◆ Sound systems: standard/BOSE/Bang & Olufsen, 9VD/8RY/8RF
- ◆ Radio - R- integrated in control unit 1 for information electronics - J794- , J8H
- ◆ TV tuner - R78- in luggage compartment (rear left), QU1/QV1
- ◆ Video input for reversing camera system, KA2
- ◆ Bluetooth hands-free system, 9ZX
- ◆ Speech dialogue system, QH1

Optional equipment (limited by weight) (Audi A6 does not come with any optional equipment)

- ◆ Audi connect with Bluetooth car phone, 9ZK
- ◆ Audi phone box and Audi connect, 9ZC
- ◆ Audi phone box, 9ZE

- ◆ Digital radio - R147- integrated in control unit 1 for information electronics - J794- , Europe/rest-of-world and QV3 only
- ◆ Satellite radio - R146- integrated in control unit 1 for information electronics - J794- , USA and QV8 only

1 - Roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - Telephone bracket - R126- / connection for external audio sources - R199- in centre console storage compartment

5 - Control unit 1 for information electronics - J794- in dash panel

6 - MOST bus

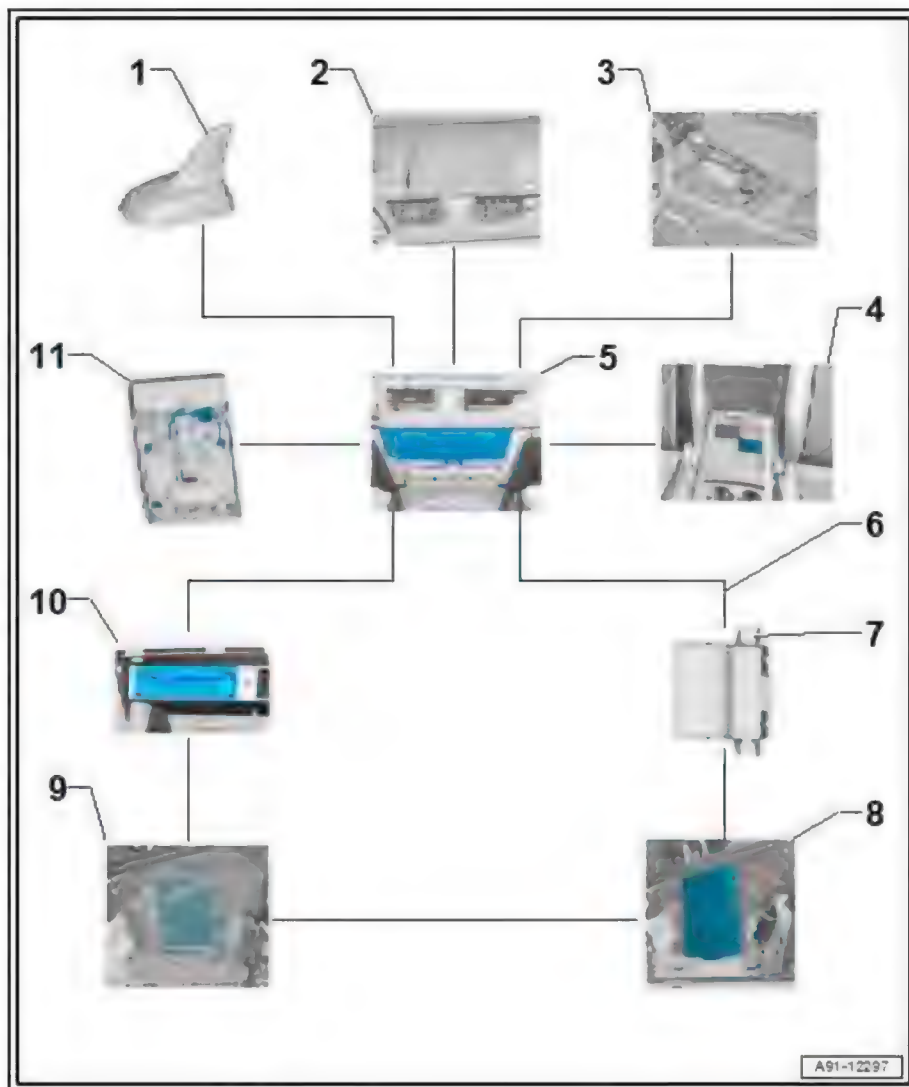
7 - Data bus diagnostic interface - J533- beneath rear seat bench

8 - Digital sound package control unit - J525- in luggage compartment (rear left)

9 - TV tuner - R78- in luggage compartment (rear left)

10 - DVD changer - R161- in glove box

11 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-



Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.



If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9-

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables :



7.1.4 Layout - navigation system, Japan

The navigation system is part of the control unit 1 for information electronics - J794- in the dash panel.

The multimedia system operating unit - E380- is used for operation.

7T6 - MMI navigation system plus, up to model year 2014

Control unit 1 for information electronics - J794- with integrated CD player/DVD player/SD memory card readers/navigation system in dash panel

- ◆ Internal hard drive (HDD) to store navigation data and MP3 files
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Multimedia system operating unit - E380- in centre console, QW1
- ◆ DVD changer - R161- in glove box, 6G0
- ◆ Connection for external audio sources - R199- in centre console, UF7
- ◆ Digital sound package control unit - J525- in luggage compartment (rear left)
- ◆ Sound systems: standard/BOSE/Bang & Olufsen, 9VD/8RY/8RF
- ◆ Radio - R- in luggage compartment (rear left), 8YQ/8AJ
- ◆ TV tuner - R78- in luggage compartment (rear left), QU6/QU7
- ◆ Bluetooth hands-free system, 9ZX
- ◆ Speech dialogue system, QH1
- ◆ Chip card reader control unit - J676-
- ◆ Traffic data aerial - R173-

1 - Roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Traffic data aerial - R173- on windscreen (top left)

4 - Chip card reader control unit - J676- in glove box

5 - Control unit 1 for information electronics - J794- in dash panel

6 - Multimedia system operating unit - E380- in centre console

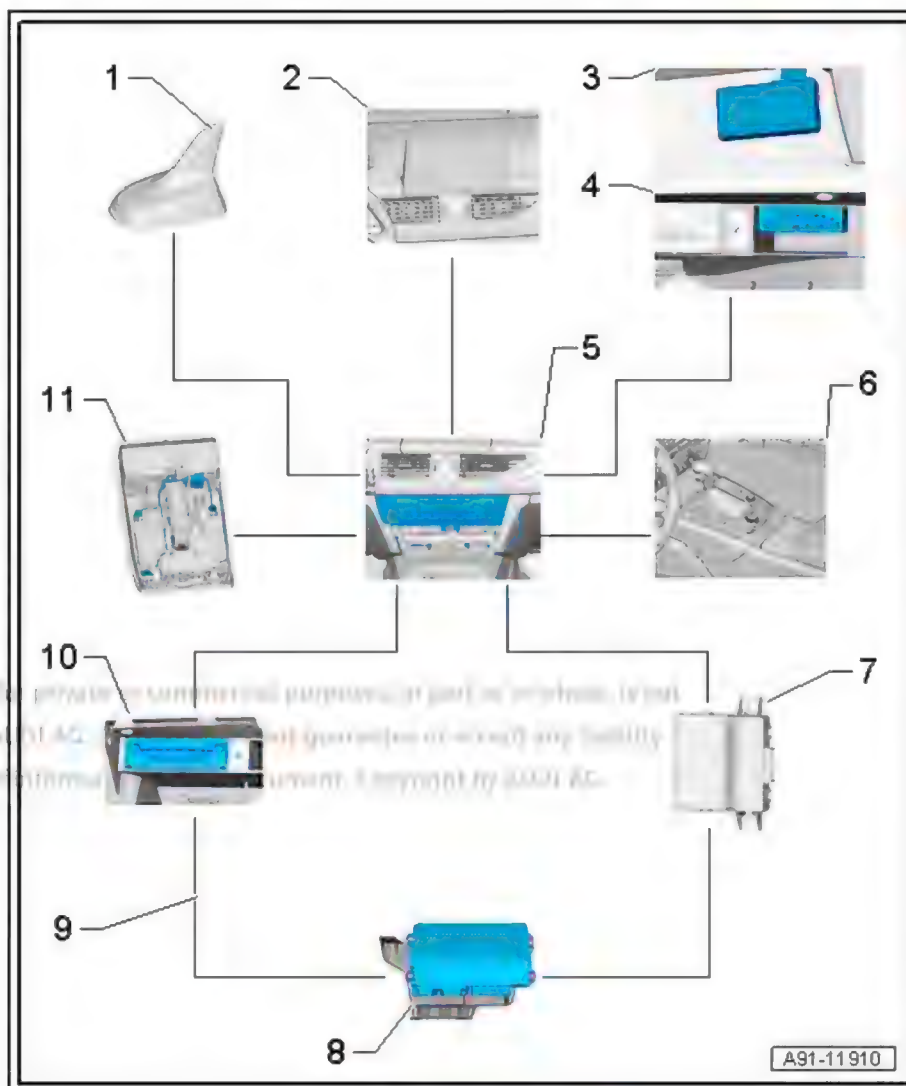
7 - Data bus diagnostic interface - J533- beneath rear seat bench

8 - Digital sound package control unit - J525- in luggage compartment (rear left)

9 - MOST bus

10 - CD changer - R41- in glove box

11 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-



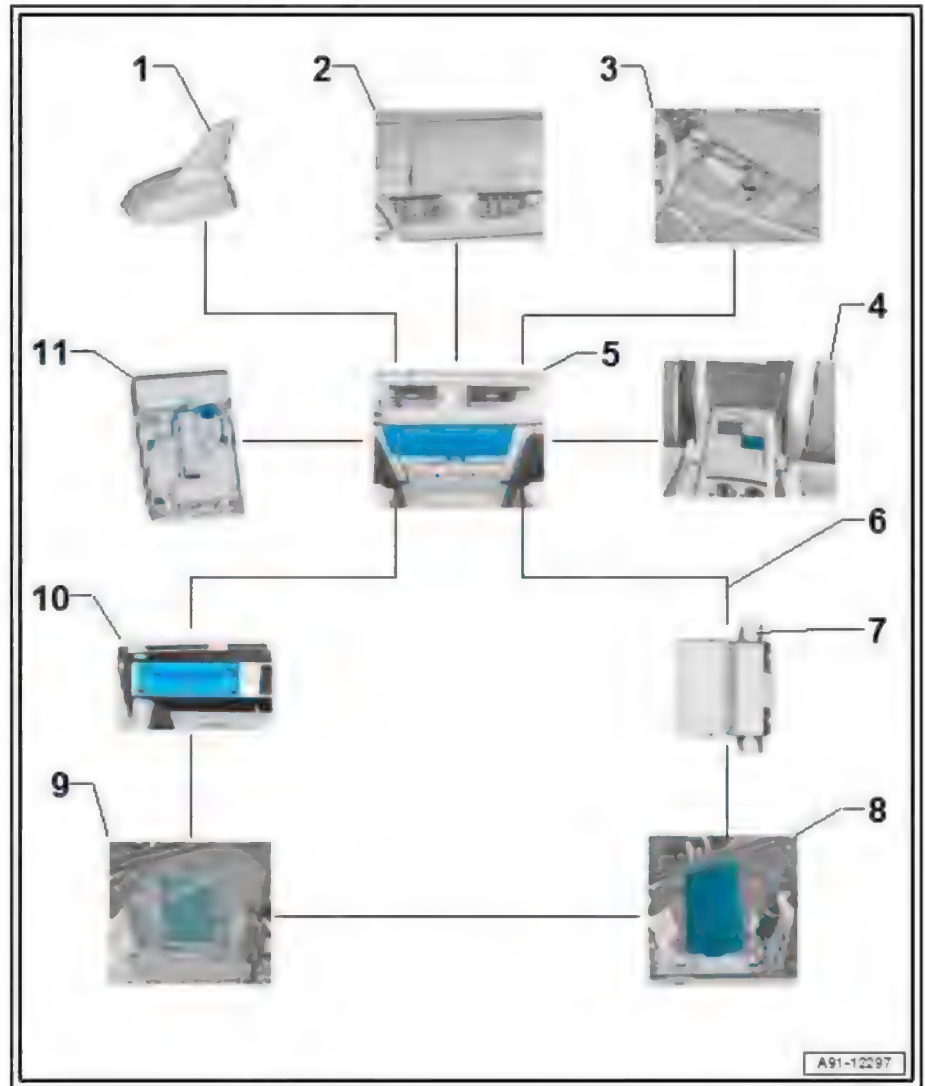
7UG - MMI navigation system plus, from model year 2015 onwards

Control unit 1 for information electronics - J794- with integrated CD player/DVD player/SD memory card readers/navigation system in dash panel

- ◆ Internal hard drive (HDD) to store navigation data and MP3 files
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Multimedia system operating unit - E380- in centre console, QW1
- ◆ DVD changer - R161- in glove box, 6G2
- ◆ Connection for external audio sources - R199- in centre console storage compartment
- ◆ Digital sound package control unit - J525- in luggage compartment (rear left)
- ◆ Sound systems: standard/BOSE/Bang & Olufsen, 9VD/8RY/8RF
- ◆ Radio - R- integrated in control unit 1 for information electronics - J794- , I8H

- ◆ TV tuner - R78- in luggage compartment (rear left), QU1/QV1
- ◆ Video input for reversing camera system, KA2
- ◆ Bluetooth hands-free system, 9ZX
- ◆ Speech dialogue system, QH1
- ◆ Chip card reader control unit - J676-
- ◆ Traffic data aerial - R173-
- ◆ Dedicated short-range communication aerial - R269-

- 1 - Roof aerial - R216-
- 2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- 3 - Multimedia system operating unit - E380- in centre console
- 4 - Telephone bracket - R126- / connection for external audio sources - R199- in centre console storage compartment
- 5 - Control unit 1 for information electronics - J794- in dash panel
- 6 - MOST bus
- 7 - Data bus diagnostic interface - J533- beneath rear seat bench
- 8 - Digital sound package control unit - J525- in luggage compartment (rear left)
- 9 - TV tuner - R78- in luggage compartment (rear left)
- 10 - DVD changer - R161- in glove box
- 11 - Front left microphone - R140- , microphone unit in front roof module - R164- in front interior light - W1-



Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.

If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9-

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables



7.2 Overview of fitting locations - navigation system

⇒ [“7.2.1 Overview of fitting locations - navigation system”, page 204](#)

⇒ [“7.2.2 Overview of fitting locations - navigation system, Japan, up to model year 2014”, page 206](#)

⇒ [“7.2.3 Overview of fitting locations - navigation system, Japan, from model year 2015 onwards”, page 207](#)

7.2.1 Overview of fitting locations - navigation system



1 - Control unit 1 for information electronics - J794-

- ❑ Pin assignment for navigation system 7T2
⇒ [page 207](#)
- ❑ Pin assignment for navigation system plus 7T6
⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Pin assignment for navigation system plus 7UG
⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Removing and installing
⇒ [page 18](#)

2 - Bolt

- ❑ 3 Nm

3 - Control unit 1 for information electronics - J794-

4 - Bolt

- ❑ 4x
- ❑ 1 Nm

5 - Trim



7.2.2 Overview of fitting locations - navigation system, Japan, up to model year 2014

1 - Chip card reader control unit - J676-

- ❑ Pin assignment

⇒ [page 211](#)

- ❑ Removing and installing

⇒ [page 212](#)

2 - Traffic data aerial - R173-

- ❑ Removing and installing

⇒ [page 118](#)

3 - Bracket

- ❑ Bonded to windscreen

4 - Locking element

5 - Control unit 1 for information electronics - J794-

6 - Trim

7 - Bolt

- ❑ 4x

- ❑ 1 Nm

8 - Bolt

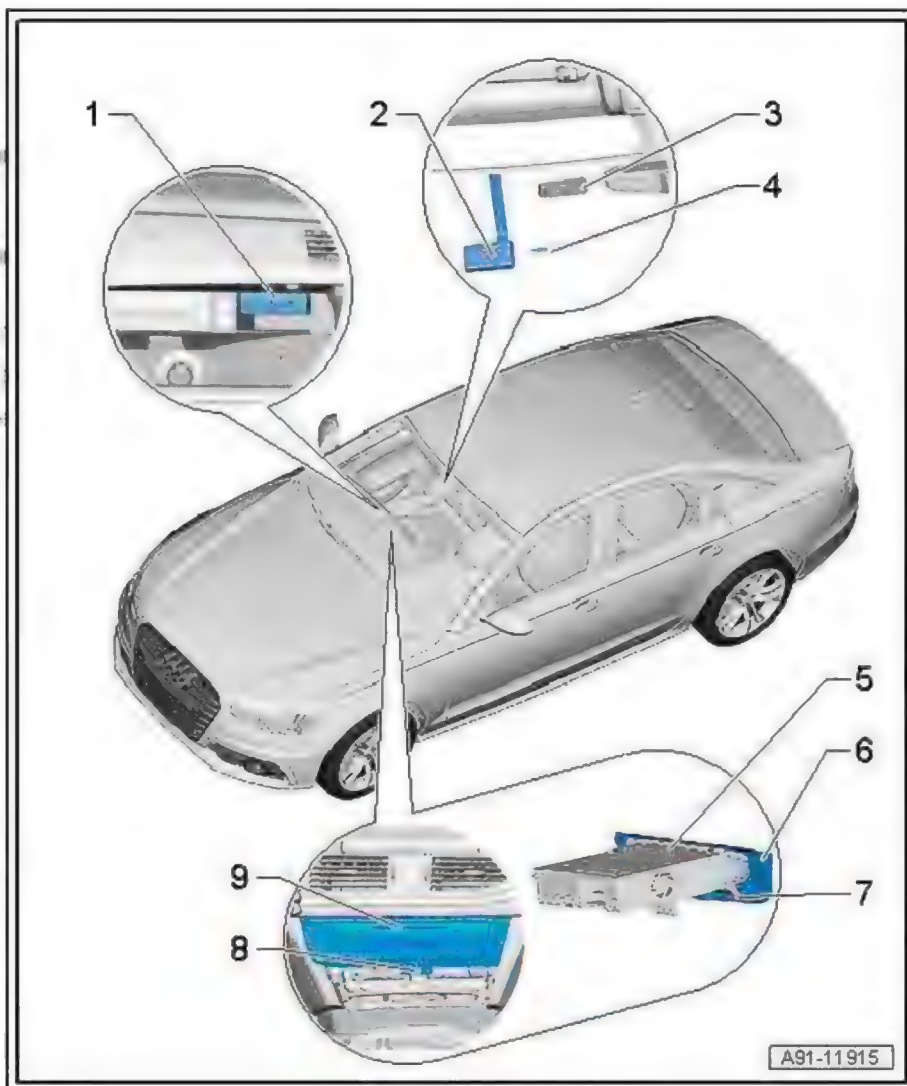
- ❑ 3 Nm

9 - Control unit 1 for information electronics - J794-

- ❑ Pin assignment for navigation system plus 7T6
⇒ Current flow diagrams, Electrical fault finding and Fitting locations

- ❑ Removing and installing

⇒ [page 18](#)



7.2.3 Overview of fitting locations - navigation system, Japan, from model year 2015 onwards

1 - Chip card reader control unit - J676-

- ☐ Pin assignment
⇒ [page 211](#)
- ☐ Removing and installing
⇒ [page 212](#)

2 - Traffic data aerial - R173-

- ☐ Removing and installing
⇒ [page 118](#)

3 - Bracket

- ☐ Bonded to windscreen

4 - Locking element

5 - Control unit 1 for information electronics - J794-

6 - Trim

7 - Bolt

- ☐ 4x
- ☐ 1 Nm

8 - Bolt

- ☐ 3 Nm

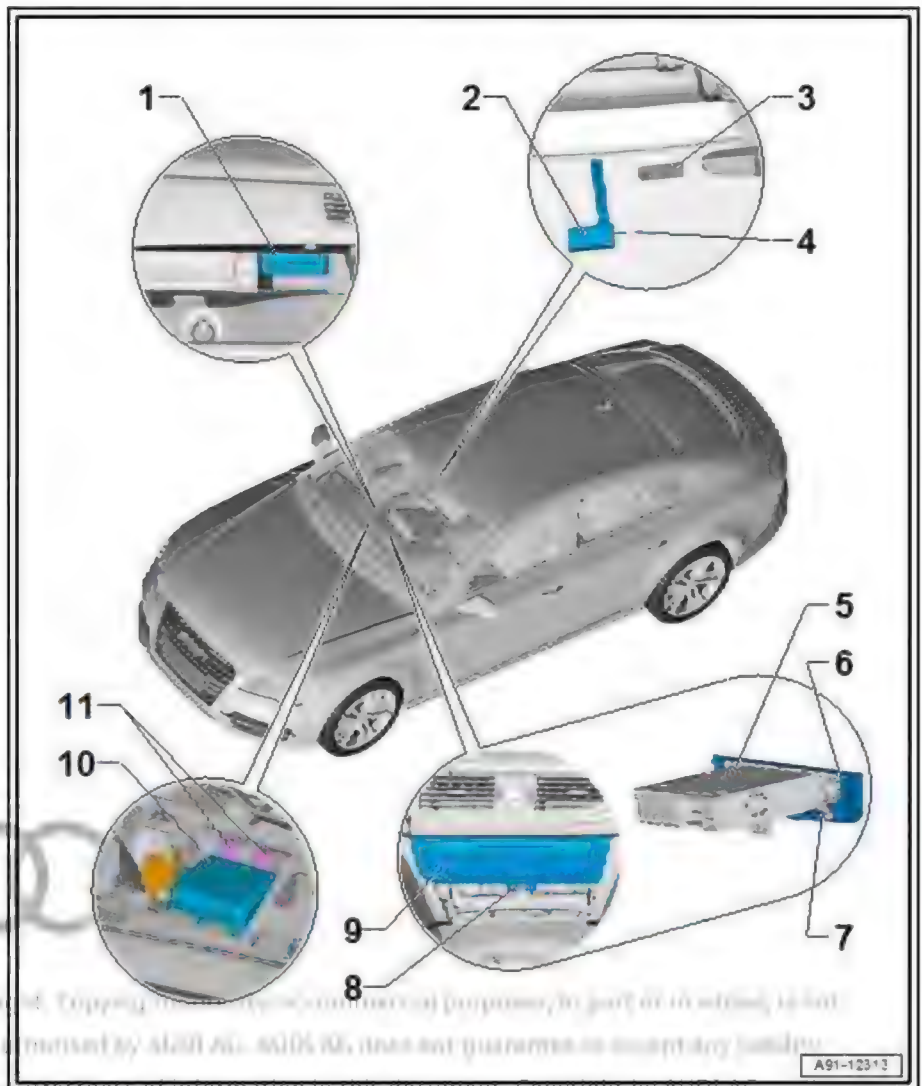
9 - Control unit 1 for information electronics - J794-

- ☐ Pin assignment for navigation system plus 7UG
⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ☐ Removing and installing
⇒ [page 18](#)

10 - Dedicated short-range communication aerial - R269-

- ☐ Removing and installing ⇒ [page 119](#)

11 - Retaining hooks



7.3 Pin assignment

⇒ "7.3.1 Pin assignment for navigation system, 7T2", page 207

⇒ "7.3.2 Pin assignment for chip card reader control unit J676, up to model year 2014", page 211

⇒ "7.3.3 Pin assignment for chip card reader control unit J676, from model year 2015 onwards", page 211

7.3.1 Pin assignment for navigation system, 7T2

Control unit 1 for information electronics - J794-

1 - DAB connection from aerial amplifier 3 - R112- , digital radio aerial - R183- , Europe/ rest-of-world and QV3 only

- SAT connection from roof aerial - R216- , satellite aerial - R170- , QV8 and USA only

2 - GPS connection from roof aerial - R216-

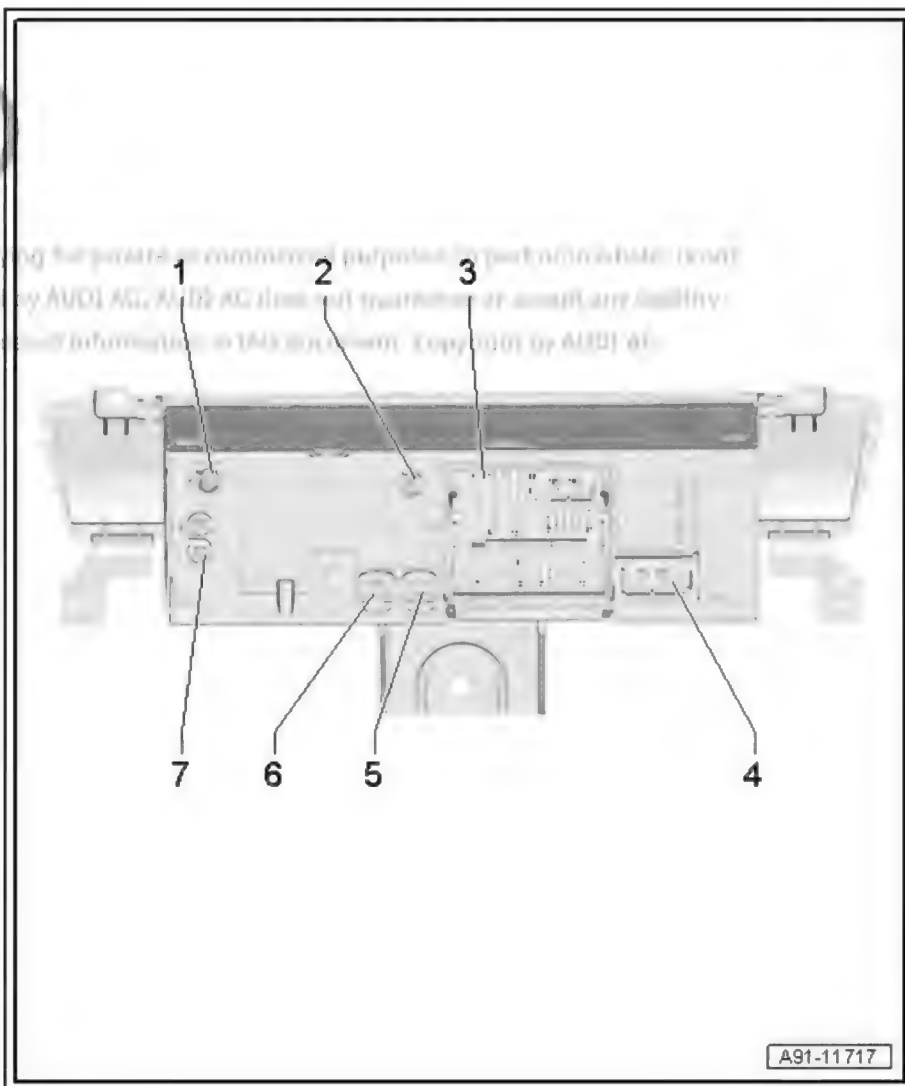
3 - Connection block with four multi-pin connectors

4 - MOST bus

5 - 4-pin connector - T4z- to connection for external audio sources - R199-

6 - 4-pin connector - T4df- to display unit for front information display and operating unit control unit - J685-

7 - Aerial connection, AM/FM/ FM2



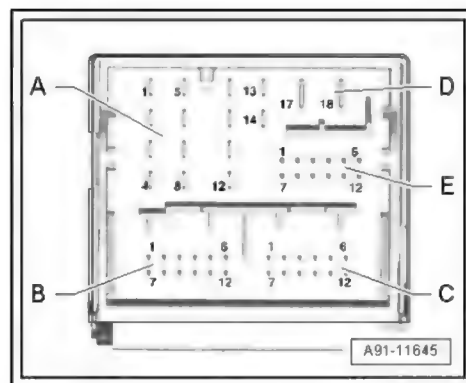
Note

Contacts which are not listed are not used.

3 - Connection block with four multi-pin connectors

A - 8-pin connector - T8e-

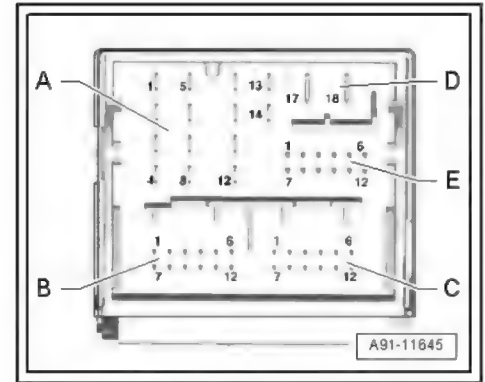
- 1 - Loudspeaker (+), rear right
- 2 - Loudspeaker (+), front right
- 3 - Loudspeaker (+), front left
- 4 - Loudspeaker (+), rear left
- 5 - Loudspeaker (-), rear right
- 6 - Loudspeaker (-), front right
- 7 - Loudspeaker (-), front left
- 8 - Loudspeaker (-), rear left





B - 12-pin connector - T12c-

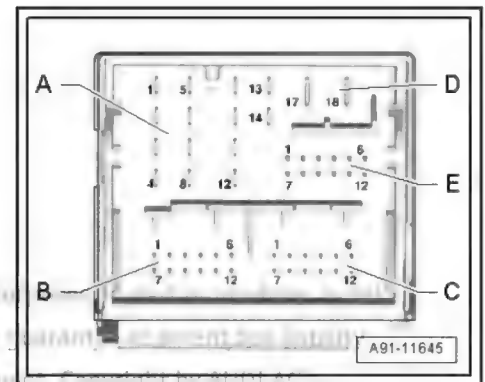
- 1 - Data from multimedia system operating unit - E380-
- 2 - RES BT multimedia system operating unit - E380-
- 3 - Not used
- 4 - Microphone input (+) from microphone unit in front roof module - R164- , front left microphone - R140-
- 5 - FBAS wire (-) from reversing camera system control unit - J772-
- 6 - Not used
- 7 - Data to multimedia system operating unit - E380-
- 8 - Wake-up multimedia system operating unit - E380-
- 9 - Res HU to multimedia system operating unit - E380-
- 10 - Not used
- 11 - FBAS wire (+) from reversing camera system control unit - J772-
- 12 - Microphone input (-) from microphone unit in front roof module - R164- , front left microphone - R140-



C - 12-pin connector - T12e-

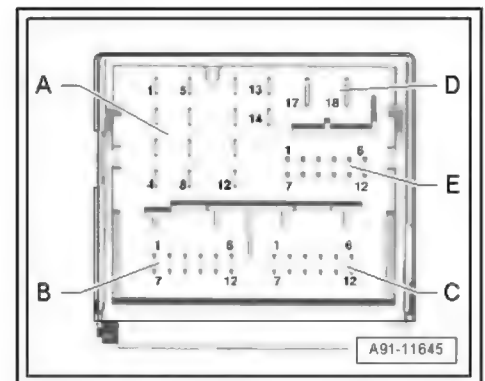
All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB, +5 V
- 4 - USB, earth
- 5 - iPod, ACC power
- 6 - Detect
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data



D - 8-pin connector - T8f-

- 9 - Subwoofer - R211-
- 10 - Centre loudspeaker - R208-
- 13 - Subwoofer - R211-
- 14 - Centre loudspeaker - R208-
- 17 - Terminal 31
- 18 - Terminal 30



E - 12-pin connector - T12d-

7 - Open circuit diagnostic lead

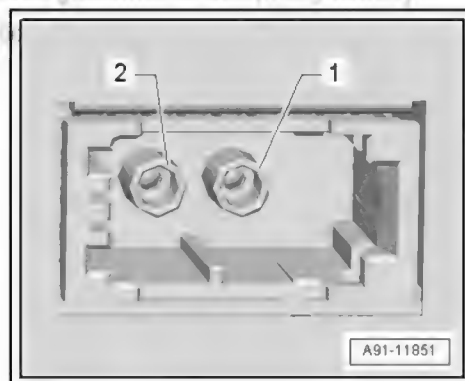
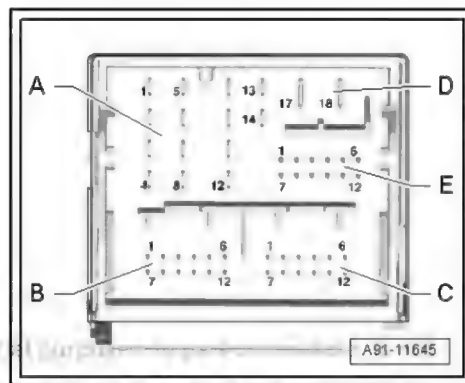


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4 - MOST bus

1 - Output

2 - Input



5 - 4-pin connector - T4z-

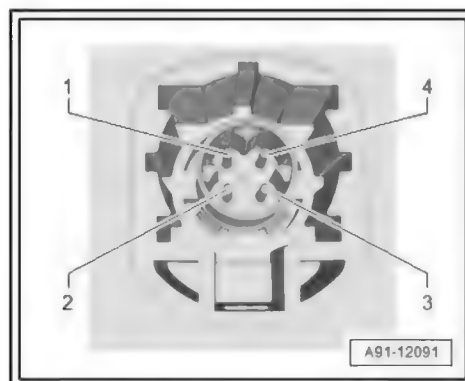
All pins are connected to the connection for external audio sources - R199- .

1 - D (+)

2 - iPod detected

3 - D (-)

4 - Earth



6 - 4-pin connector - T4df-

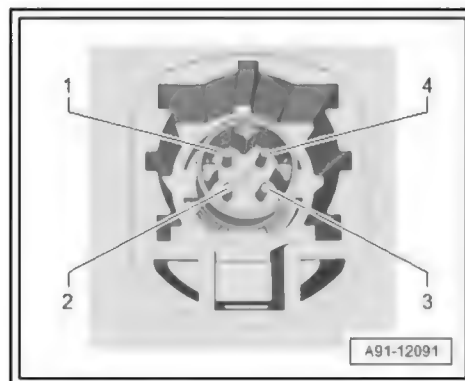
All pins are connected to the display unit for front information display and operating unit control unit - J685- .

1 - LVDS (-)

2 - LIN

3 - LVDS (+)

4 - Earth





7.3.2 Pin assignment for chip card reader control unit - J676- , up to model year 2014

Chip card reader control unit - J676-



Note

Contacts which are not listed are not used.

32-pin connector - T32p-

1-16 - To traffic data aerial - R173-

17 - Data VICS to control unit 1 for information electronics - J794-

19 - Data VICS from control unit 1 for information electronics - J794-

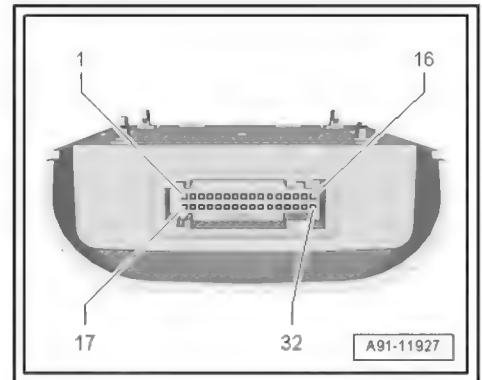
21 - Switch-on signal to control unit 1 for information electronics - J794-

22 - Terminal 30

23 - Data ETC to control unit 1 for information electronics - J794-

25 - Data ETC from control unit 1 for information electronics - J794-

28 - Terminal 31



7.3.3 Pin assignment for chip card reader control unit - J676- , from model year 2015 onwards

Chip card reader control unit - J676-

1 - 5-pin connector - T5br- to connection for external audio sources - R199- front, 2x USB, AUX-IN

2 - 10-pin connector - T10bk-

3 - Connection for dedicated short-range communication aerial - R269-

1 - 5-pin connector - T5br-

All pins are connected to the connection for external audio sources - R199- .

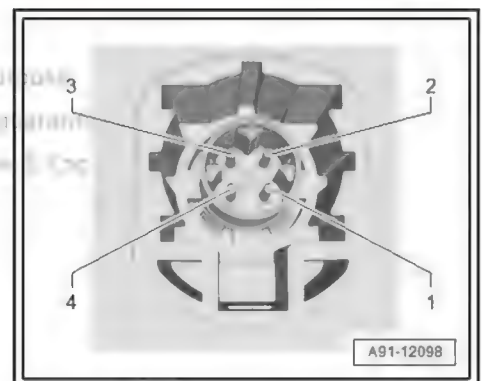
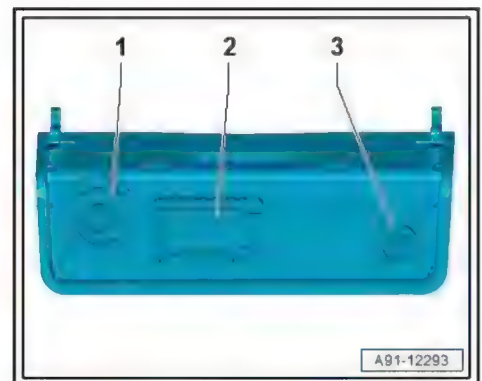
1 - Data (+)

2 - USB, +5 V

3 - Data (-)

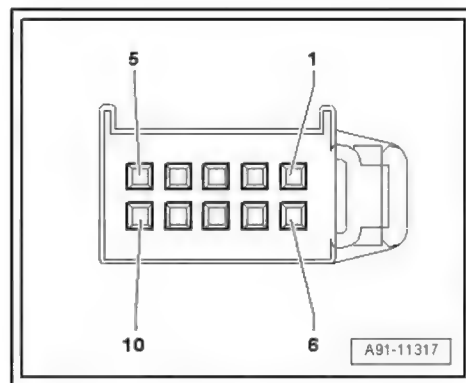
4 - USB, earth

5 - Screen earth



10-pin connector - T10bk-

- 1 - Power supply (+) for traffic data aerial - R173-
- 2 - Power supply (-) for traffic data aerial - R173-
- 3 - Data VICS to traffic data aerial - R173-
- 4 - Data VICS from traffic data aerial - R173-
- 5 - Not used
- 6 - Not used
- 7 - Diagnosis 1, traffic data aerial - R173- :
- 8 - Diagnosis 2, traffic data aerial - R173- :
- 9 - Terminal 30
- 10 - Terminal 31



7.4 Removing and installing chip card reader control unit

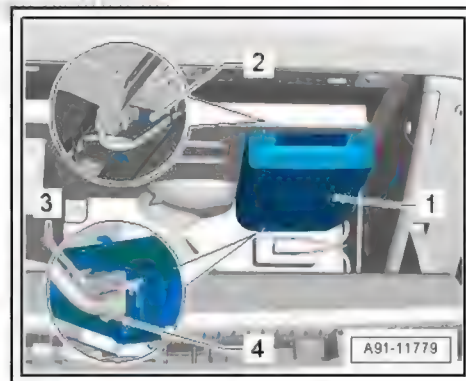
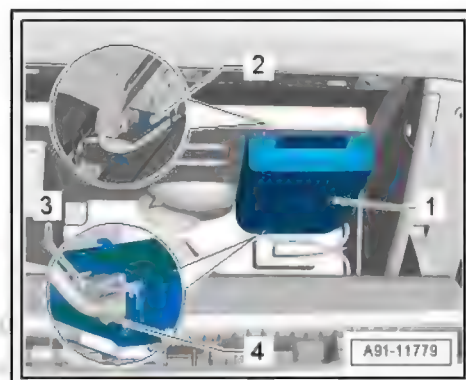
The chip card reader control unit - J676- is located in the glove box.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Open glove box.
- Remove chip card.
- Slide chip card reader control unit - J676- -1- towards rear until it can be detached from lining.
- Pull out retaining clip -4-.
- Release and unplug connector -3- at chip card reader control unit - J676- -1-.

Installing

- Installation is carried out in reverse sequence; note the following:
- Plug in connector -3- and then slide retaining clip -4- through opening.
- Make sure all retaining tabs -2- of chip card reader control unit - J676- -1- engage in lining.





8 TV system

⇒ ["8.1 Layout - TV system", page 213](#)

⇒ ["8.2 Overview of fitting locations - TV system", page 218](#)

⇒ ["8.3 Pin assignment", page 222](#)

⇒ ["8.4 Removing and installing TV tuner", page 229](#)

⇒ ["8.5 Removing and installing TV card reader", page 233](#)

8.1 Layout - TV system

⇒ ["8.1.1 Layout - TV system, up to model year 2014", page 213](#)

⇒ ["8.1.2 Layout - TV system, Japan, up to model year 2014", page 215](#)

⇒ ["8.1.3 Layout - TV system, from model year 2015 onwards", page 217](#)

8.1.1 Layout - TV system, up to model year 2014

The TV system is part of the MMI infotainment system.

The TV tuner - R78- is connected to the other components of the infotainment system via the MOST bus. The multimedia system operating unit - E380- is used for operation.

A so-called "hybrid" tuner is fitted for receiving analogue and digital TV channels. From model year 2012 onwards, a digital TV tuner - R78- (QU7) is fitted.

A DVD changer - R161- (6G0) is located in the glove box.

1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Multimedia system operating unit - E380- in centre console

3 - Control unit 1 for information electronics - J794- in dash panel

4 - MOST bus

5 - Data bus diagnostic interface - J533- beneath rear seat bench

6 - Digital sound package control unit - J525- in luggage compartment (rear left)

7 - Radio - R- in luggage compartment (rear left)

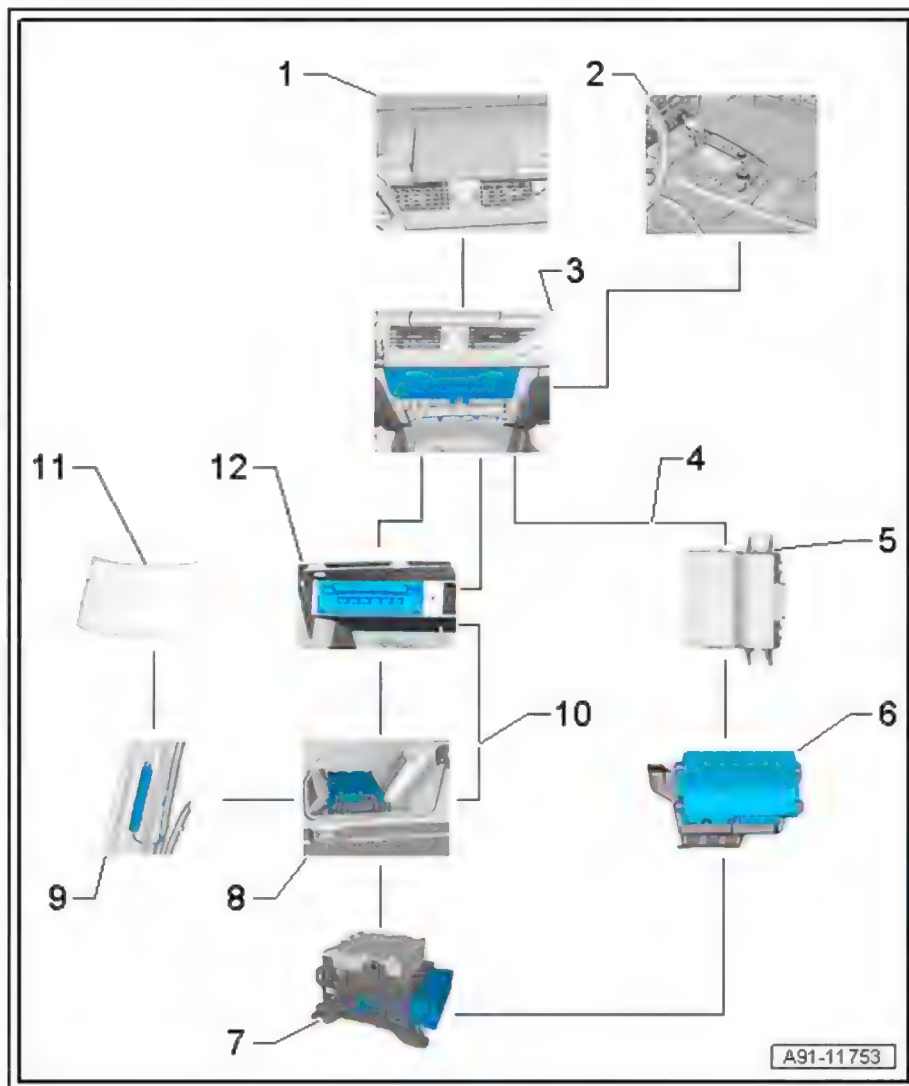
8 - TV tuner - R78- in luggage compartment (rear left)

9 - Aerial amplifiers at D-pillars/ on rear lid

10 - FBAS wire

11 - Rear window aerials

12 - DVD changer - R161- in glove box



Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.

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If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



8.1.2 Layout - TV system, Japan, up to model year 2014

The TV system is part of the MMI infotainment system.

The TV tuner - R78- is connected to the other components of the infotainment system via the MOST bus. The multimedia system operating unit - E380- is used for operation.

A so-called "hybrid" tuner is fitted for receiving analogue and digital TV channels. From model year 2012, a digital TV tuner - R78- for digital reception only is fitted, QU7.

A TV card reader - R78- for receiving pay-TV channels is connected to the TV tuner - R204- . TV card reader - R78- is no longer fitted if digital TV tuner - R204- is installed. Instead, digital TV tuner - R78- contains a SIM card slot.

A DVD changer - R161- (6G0) is located in the glove box.



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1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Multimedia system operating unit - E380- in centre console

3 - Control unit 1 for information electronics - J794- in dash panel

4 - MOST bus

5 - Data bus diagnostic interface - J533- beneath rear seat bench

6 - Digital sound package control unit - J525- in luggage compartment (rear left)

7 - FBAS wire

8 - Radio - R- in luggage compartment (rear left)

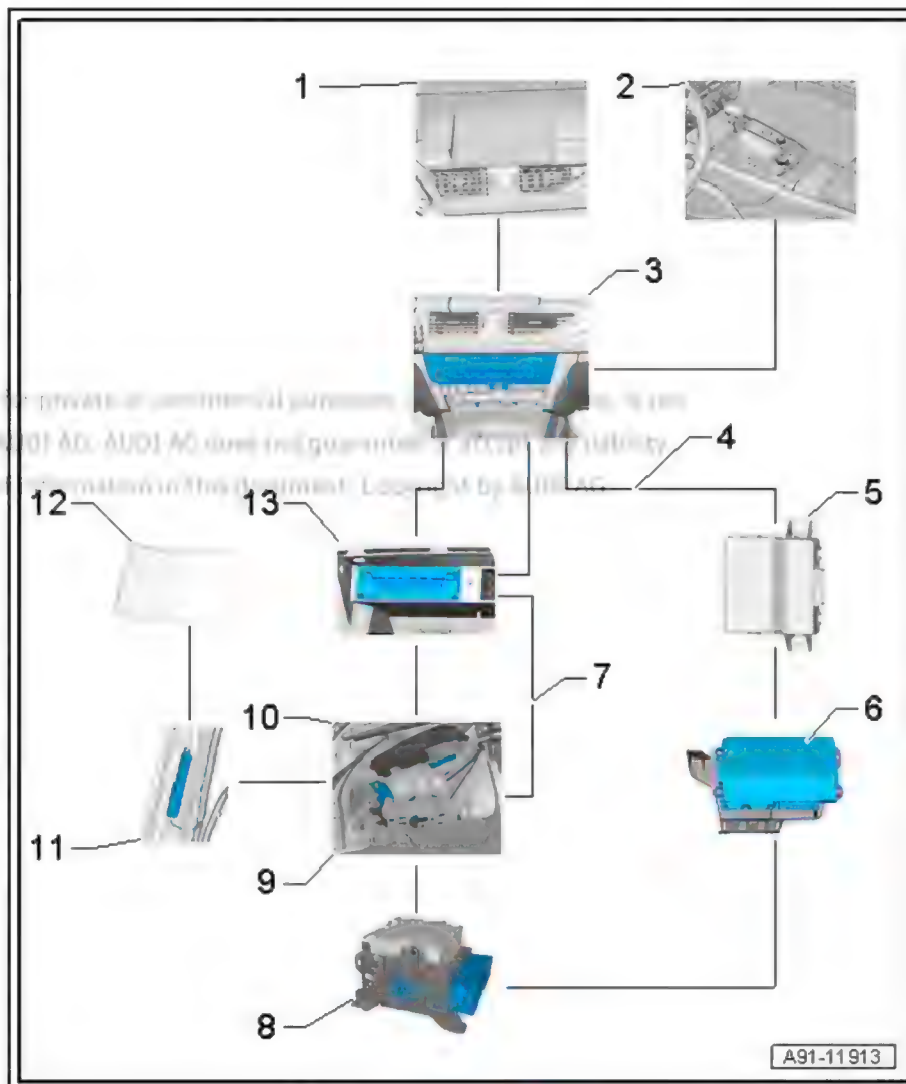
9 - TV tuner - R78- in luggage compartment (rear left)

10 - TV card reader - R204- in luggage compartment (rear left)

11 - Aerial amplifiers at D-pillars/on rear lid

12 - Rear window aerials

13 - DVD changer - R161- in glove box



Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.



If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .

VAS 6223 A



W00-11495

8.1.3 Layout - TV system, from model year 2015 onwards

The TV system is part of the MMI infotainment system.

The TV tuner - R78- is connected to the other components of the infotainment system via the MOST bus. The multimedia system operating unit - E380- is used for operation.

A DVD changer - R161- (6G0) is located in the glove box.

1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Multimedia system operating unit - E380- in centre console

3 - Control unit 1 for information electronics - J794- in dash panel

4 - MOST bus

5 - Data bus diagnostic interface - J533- beneath rear seat bench

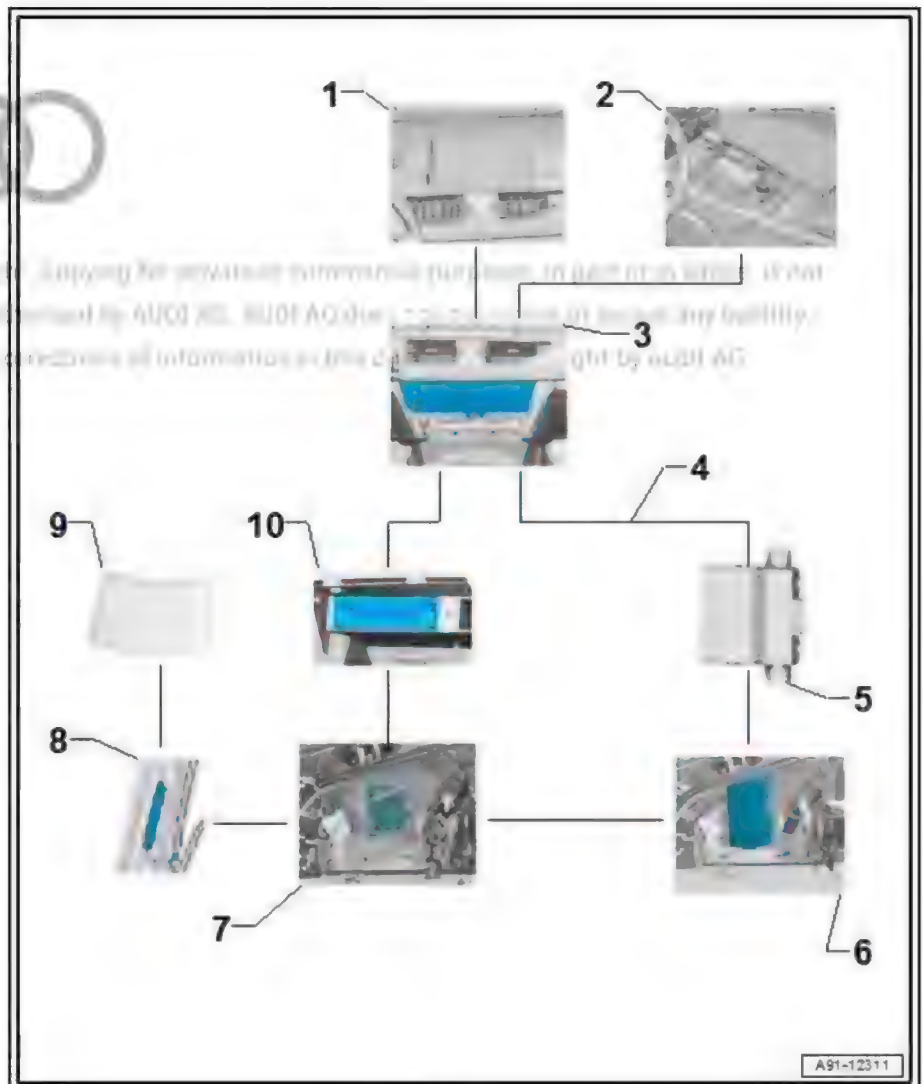
6 - Digital sound package control unit - J525- in luggage compartment (rear left)

7 - TV tuner - R78- in luggage compartment (rear left)

8 - Aerial amplifier in rear lid

9 - Rear window aerials

10 - DVD changer - R161- in glove box



A91-12311

Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A fibre optic cable is used. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

The end faces of the connectors must not become dirty.

If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cables.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ; Fibre optic cables .



8.2 Overview of fitting locations - TV system

⇒ ["8.2.1 Overview of fitting locations - TV system, up to model year 2014", page 218](#)

⇒ ["8.2.2 Overview of fitting locations - TV system, Japan, up to model year 2014", page 220](#)

⇒ ["8.2.3 Overview of fitting locations - TV system, from model year 2015 onwards", page 221](#)

8.2.1 Overview of fitting locations - TV system, up to model year 2014



1 - DVD changer - R161-

- ☐ Pin assignment
⇒ [page 150](#)
- ☐ Removing and installing
⇒ [page 152](#)

2 - Radio release tool -
T10057-

3 - TV tuner - R78-

- ☐ Pin assignment for hybrid
⇒ [page 222](#)
- ☐ Removing and installing
⇒ [page 229](#)

- Digital TV tuner - R78- , from
model year 2012 onwards

- ☐ Pin assignment
⇒ [page 224](#)
- ☐ Removing and installing
⇒ [page 230](#)

4 - Bolt

- ☐ 4x (hybrid)
- ☐ 2x (DTV)
- ☐ 2 Nm



...
...
...



8.2.2 Overview of fitting locations - TV system, Japan, up to model year 2014

1 - Radio release tool - T10057-

2 - DVD changer - R161-

- ☐ Pin assignment
⇒ [page 150](#)
- ☐ Removing and installing
⇒ [page 152](#)

3 - TV card reader - R204-

- ☐ Installed with BOSE sound system
- ☐ Removing and installing
⇒ [page 233](#)

4 - TV card reader - R204-

- ☐ Installed with Bang & Olufsen sound system
- ☐ Removing and installing
⇒ [page 233](#)

5 - Bolt

- ☐ 2x
- ☐ 2 Nm

6 - Bolt

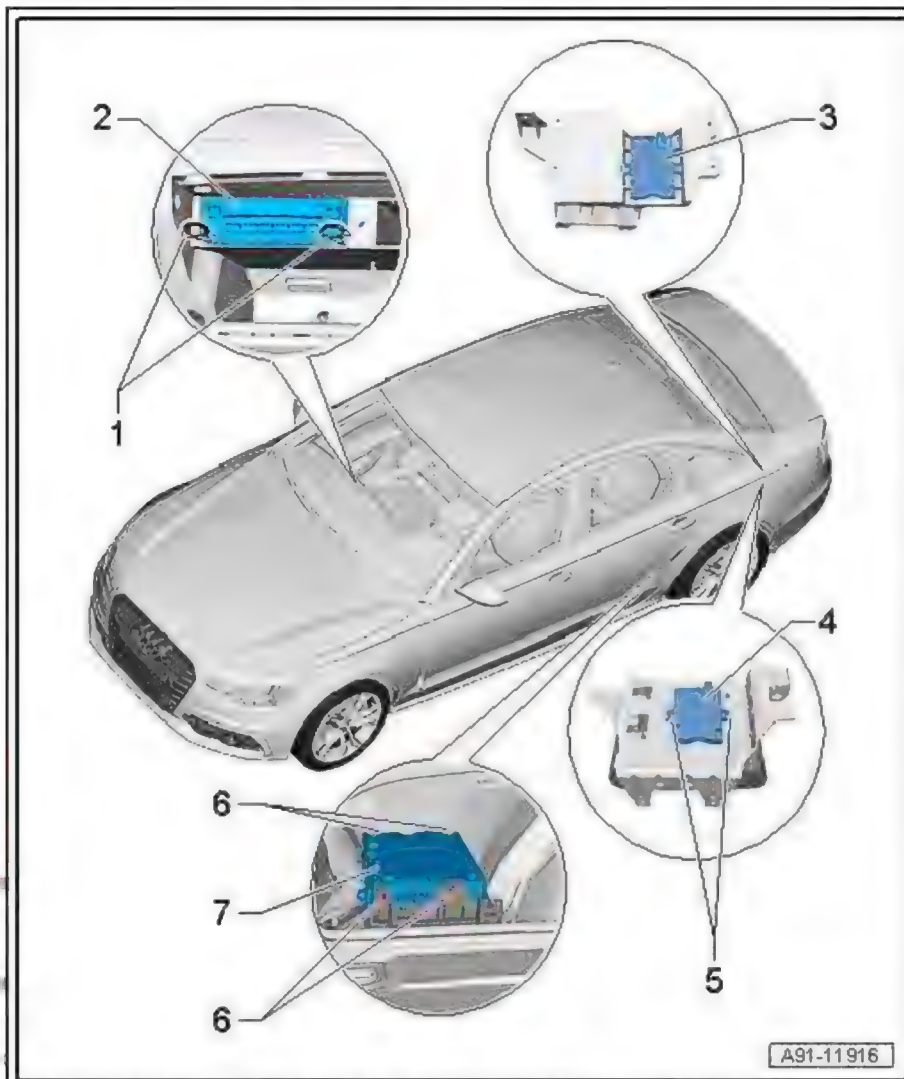
- ☐ 4x (hybrid)
- ☐ 2x (DTV)
- ☐ 2 Nm

7 - TV tuner - R78-

- ☐ Pin assignment for hybrid ⇒ [page 225](#)
- ☐ Removing and installing
⇒ [page 229](#)

- Digital TV tuner - R78- , from model year 2012 onwards

- ☐ Pin assignment ⇒ [page 227](#)
- ☐ Removing and installing ⇒ [page 230](#)



A91-11916

8.2.3 Overview of fitting locations - TV system, from model year 2015 onwards

1 - Radio release tool - T10057-

2 - DVD changer - R161-

- ☐ Pin assignment
⇒ [page 150](#)
- ☐ Removing and installing
⇒ [page 152](#)

3 - Bolt

- ☐ 3x
- ☐ Top: 5 Nm
- ☐ Bottom: 4 Nm

4 - Bracket

5 - Bolt

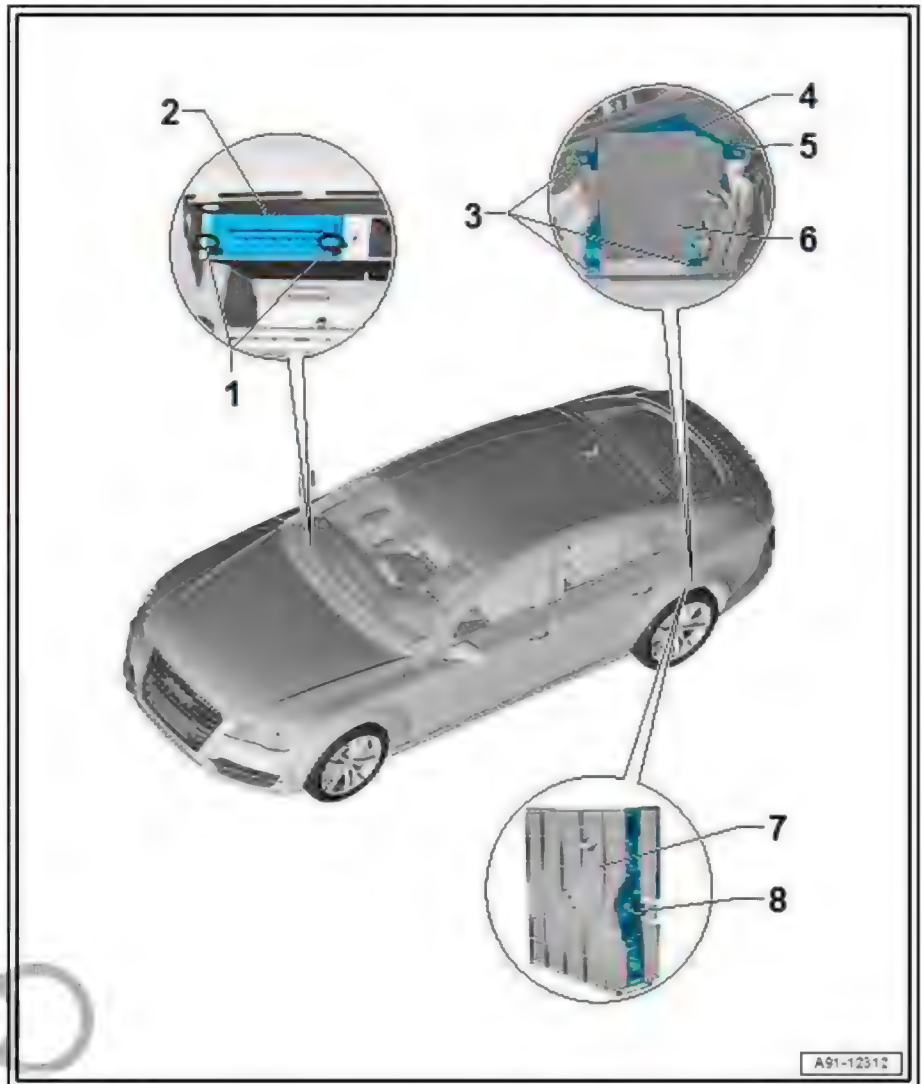
- ☐ 5 Nm

6 - Digital sound package control unit - J525-

7 - Bracket

8 - TV tuner - R78-

- ☐ Pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ☐ Pin assignment (Japan)
⇒ [page 227](#)
- ☐ Pin assignment (South Korea) ⇒ [page 228](#)
- ☐ Removing and installing
⇒ [page 232](#)



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8.3 Pin assignment

⇒ "8.3.1 Pin assignment for TV tuner R78 , hybrid", page 222

⇒ "8.3.2 Pin assignment for digital TV tuner R78 ", page 224

⇒ "8.3.3 Pin assignment for TV tuner R78 , hybrid, Japan",
page 225

⇒ "8.3.4 Pin assignment for digital TV tuner R78 , Japan",
page 227

⇒ "8.3.5 Pin assignment for digital TV tuner R78 , South Korea",
page 228

8.3.1 Pin assignment for TV tuner - R78- , hybrid

TV tuner - R78-

Saloon

- 1 - Connection TV1/TV2 from aerial amplifier 3 - R112- / aerial amplifier - R24-
- 2 - Connection TV3 from aerial amplifier 4 - R113-
- 3 - 20-pin connector - T20d-
- 4 - MOST bus
- 5 - FBAS output to control unit 1 for information electronics - J794- / DVD changer - R161-

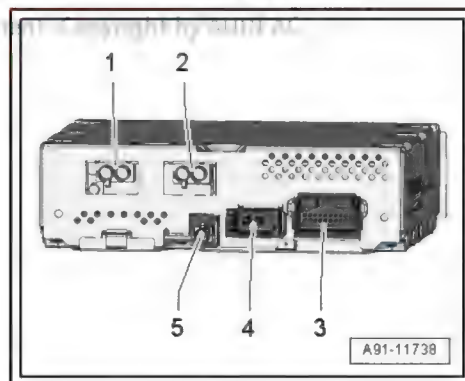
Avant

- 1 - Connection TV1/TV2 from aerial amplifier - R24- / aerial amplifier 4 - R113-
- 2 - Connection TV3 from aerial amplifier 3 - R112-
- 3 - 20-pin connector - T20d-
- 4 - MOST bus
- 5 - FBAS output to control unit 1 for information electronics - J794- / DVD changer - R161-

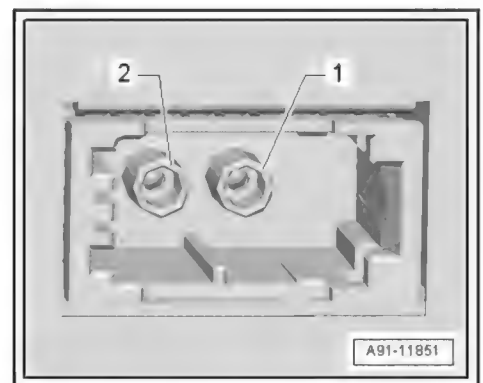
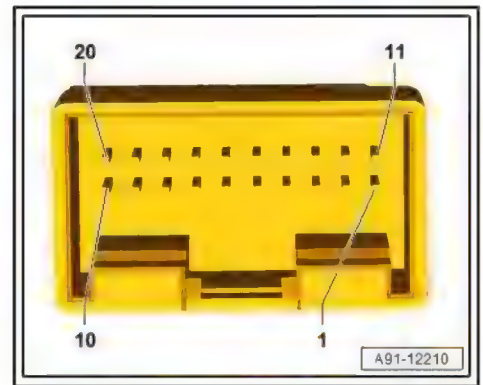


Note

Contacts which are not listed are not used.



- 1 - Terminal 30
 - 2 - Terminal 31
 - 3 - Open circuit diagnostic lead
 - 4 - Screen earth
 - 5 - Video out, Rear Seat Entertainment system
 - 6 - Screen earth
 - 7 - Audio out L, Rear Seat Entertainment system
 - 8 - Audio out R, Rear Seat Entertainment system
 - 9 - Screen earth
 - 10 - Audio in L
 - 11 - Audio in R
 - 12 - Video in
 - 13 - Screen earth
 - 14 - Screen earth
 - 15 - Screen earth
 - 16 - Audio in L
 - 17 - Audio in R
 - 18 - Video in
 - 19 - Screen earth
 - 20 - I/D PIN
- 4 - MOST bus
- 1 - Output
 - 2 - Input



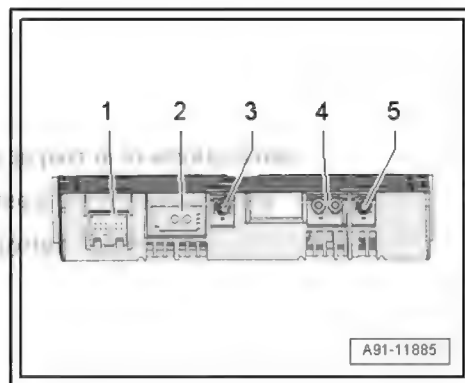
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8.3.2 Pin assignment for digital TV tuner - R78-

TV tuner - R78-

Saloon

- 1 - 12-pin connector - T12af-
- 2 - MOST bus
- 3 - FBAS output to control unit 1 for information electronics - J794-
- 4 - Connection TV2/TV3 from aerial amplifier - R24- / aerial amplifier 4 - R113-
- 5 - Connection TV1 from aerial amplifier 3 - R112-



Avant

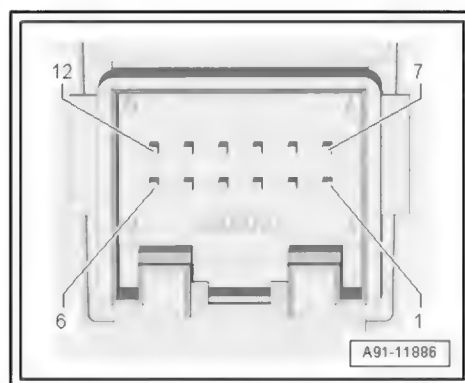
- 1 - 12-pin connector - T12af-
- 2 - MOST bus
- 3 - FBAS output to control unit 1 for information electronics - J794-
- 4 - Connection TV2/TV3 from aerial amplifier 4 - R113- / aerial amplifier 3 - R112-
- 5 - Connection TV1 from aerial amplifier - R24-



Note

Contacts which are not listed are not used.

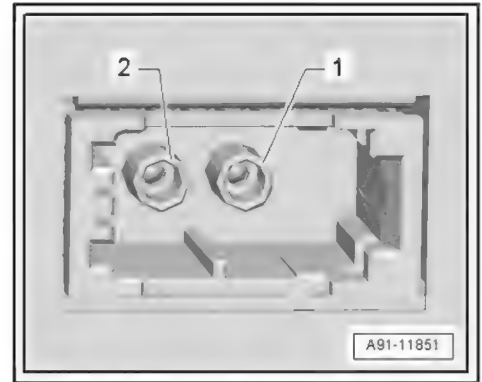
- 1 - 12-pin connector - T12af-
- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Open circuit diagnostic lead
- 4 - Screen earth
- 5 - Video out, Rear Seat Entertainment system
- 6 - Screen earth
- 7 - Audio out L, Rear Seat Entertainment system
- 8 - Audio out R, Rear Seat Entertainment system
- 9 - Screen earth
- 10 - Audio in L
- 11 - Audio in R
- 12 - Video in





2 - MOST bus

- 1 - Output
- 2 - Input

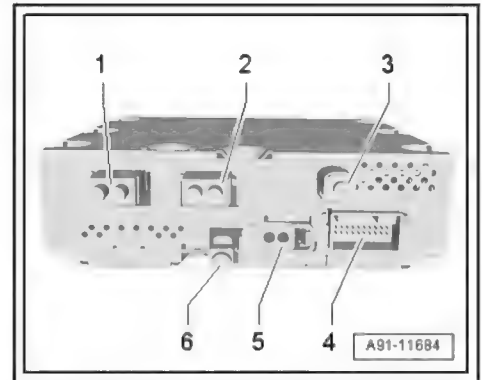


8.3.3 Pin assignment for TV tuner - R78- , hybrid, Japan

TV tuner - R78-

Saloon

- 1 - Connection TV1/TV2 from aerial amplifier 3 - R112- / aerial amplifier - R24-
- 2 - Connection TV3 from aerial amplifier 4 - R113-
- 3 - Connection TV card reader - R204-
- 4 - 20-pin connector - T20d-
- 5 - MOST bus
- 6 - FBAS output to control unit 1 for information electronics - J794- / DVD changer - R161-



Avant

- 1 - Connection TV1/TV2 from aerial amplifier - R24- / aerial amplifier 4 - R113-
- 2 - Connection TV3 from aerial amplifier 3 - R112-
- 3 - Connection TV card reader - R204-
- 4 - 20-pin connector - T20d-
- 5 - MOST bus
- 6 - FBAS output to control unit 1 for information electronics - J794- / DVD changer - R161-



Note

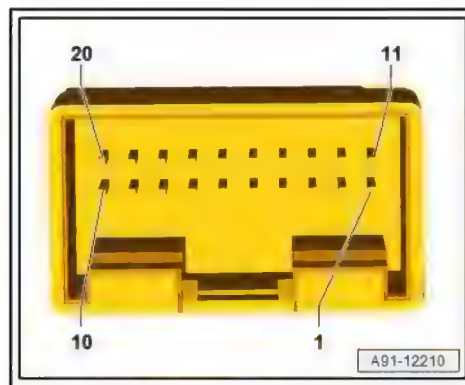
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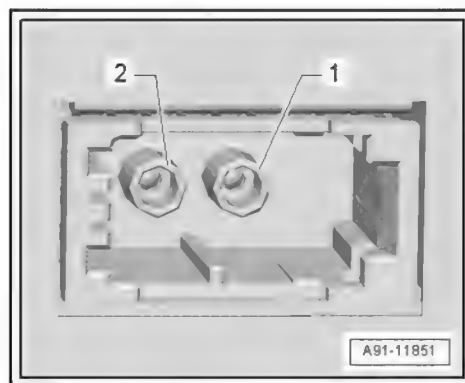
3 - 20-pin connector - T20d-

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Open circuit diagnostic lead
- 4 - Screen earth
- 5 - Video out, Rear Seat Entertainment system
- 6 - Screen earth
- 7 - Audio out L, Rear Seat Entertainment system
- 8 - Audio out R, Rear Seat Entertainment system
- 9 - Screen earth
- 10 - Audio in L
- 11 - Audio in R
- 12 - Video in
- 13 - Screen earth
- 14 - Screen earth
- 15 - Screen earth
- 16 - Audio in L
- 17 - Audio in R
- 18 - Video in
- 19 - Screen earth
- 20 - I/D PIN



5 - MOST bus

- 1 - Output
- 2 - Input





8.3.4 Pin assignment for digital TV tuner - R78- , Japan

TV tuner - R78-

Saloon

- 1 - MOST bus
- 2 - FBAS output to control unit 1 for information electronics - J794- , up to model year 2014
- 3 - SIM card reader
- 4 - Connection TV1 from aerial amplifier - R24-
- 5 - Connection TV2/TV3 from aerial amplifier 3 - R112- / aerial amplifier 4 - R113-
- 6 - 12-pin connector - T12af-

Avant

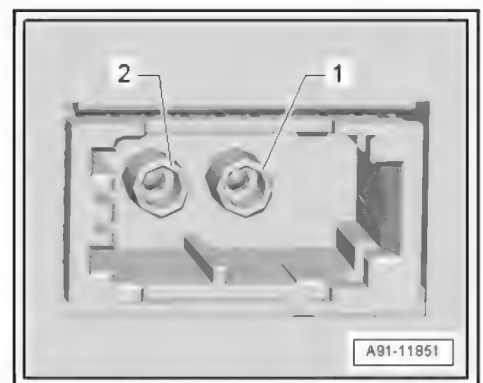
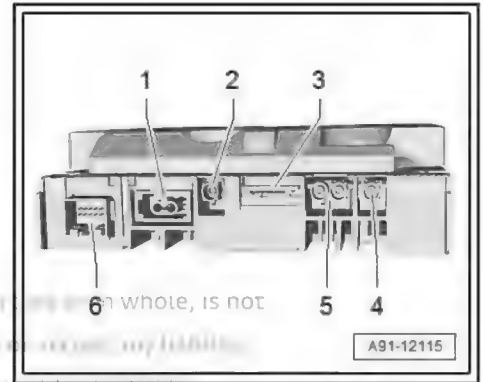
- 1 - MOST bus
- 2 - FBAS output to control unit 1 for information electronics - J794- , up to model year 2014
- 3 - SIM card reader
- 4 - Connection TV1 from aerial amplifier - R24-
- 5 - Connection TV2/TV3 from aerial amplifier 4 - R113- / aerial amplifier 3 - R112-
- 6 - 12-pin connector - T12af-



Note

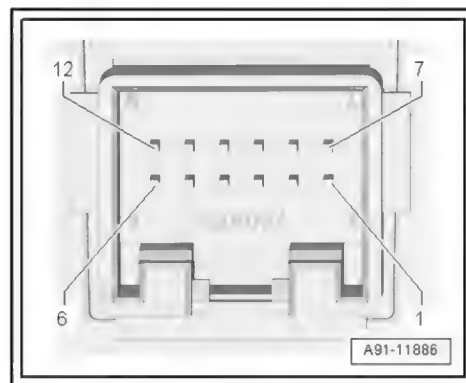
Contacts which are not listed are not used.

- 1 - MOST bus
- 1 - Output
- 2 - Input



6 - 12-pin connector - T12af-

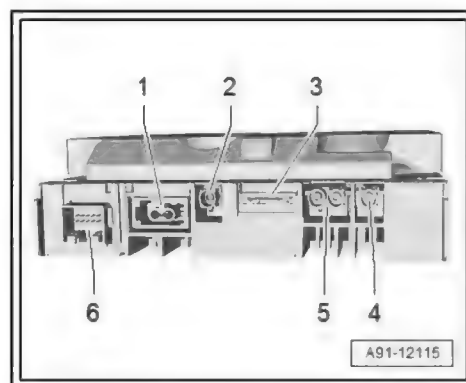
- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Open circuit diagnostic lead
- 4 - Screen earth
- 5 - Video out, Rear Seat Entertainment system
- 6 - Screen earth
- 7 - Audio out L, Rear Seat Entertainment system
- 8 - Audio out R, Rear Seat Entertainment system
- 9 - Screen earth
- 10 - Audio in L
- 11 - Audio in R
- 12 - Video in



8.3.5 Pin assignment for digital TV tuner - R78- , South Korea

TV tuner - R78-

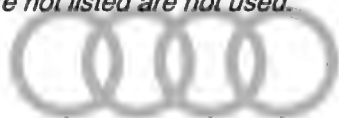
- 1 - MOST bus
- 2 - Not used
- 3 - Not used
- 4 - Connection TV1 from aerial amplifier - R24-
- 5 - Not used
- 6 - 12-pin connector - T12af-



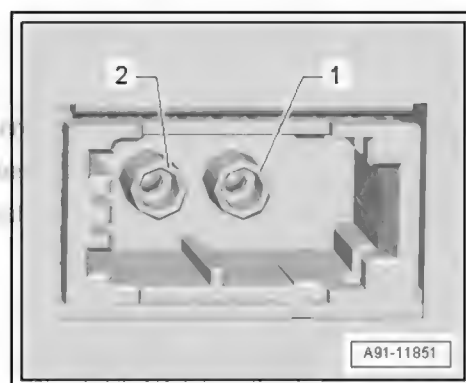
Note

Contacts which are not listed are not used.

- 1 - MOST bus
- 1 - Input
- 2 - Output



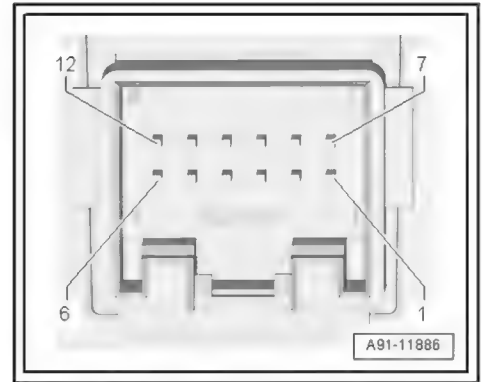
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3 - 12-pin connector - T12af-

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Open circuit diagnostic lead
- 4 - Screen earth
- 5 - Video out, Rear Seat Entertainment system
- 6 - Screen earth
- 7 - Audio out L, Rear Seat Entertainment system
- 8 - Audio out R, Rear Seat Entertainment system
- 9 - Screen earth
- 10 - Audio in L
- 11 - Audio in R
- 12 - Video in



8.4 Removing and installing TV tuner

⇒ ["8.4.1 Removing and installing TV tuner R78 - hybrid", page 229](#)

⇒ ["8.4.2 Removing and installing digital TV tuner R78 - up to model year 2014", page 230](#)

⇒ ["8.4.3 Removing and installing TV tuner R78 - from model year 2015 onwards", page 232](#)

8.4.1 Removing and installing TV tuner - R78- - hybrid

Special tools and workshop equipment required

- ◆ Protective cap for cable connector - VAS 6223/9-



- ◆ Torque screwdriver - V.A.G 1624-



The TV tuner - R78- -1- is located behind the luggage compartment trim (left-side) in the rack.

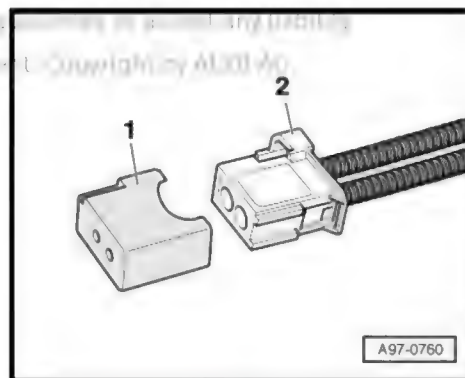
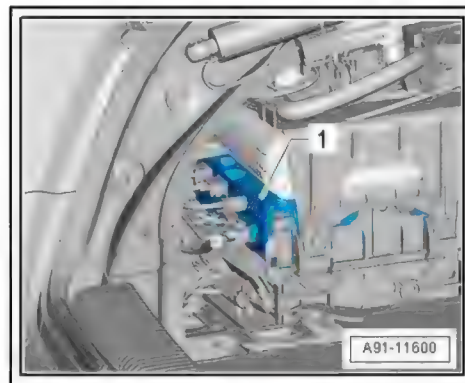


Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ➔ Vehicle diagnostic tester.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Open left storage compartment in luggage compartment.
- Remove bracket with sound amplifiers:
 - ◆ BOSE ➔ [page 60](#)
 - ◆ Bang & Olufsen ➔ [page 64](#)
- Release and unplug connectors on TV tuner - R78- -.
- Fit protective cap for cable connector -VAS 6223/9- -1- onto MOST bus connector -2-.



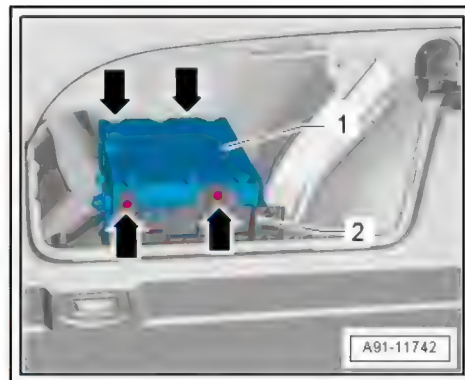
- Unscrew bolts -arrows- at TV tuner - R78- -1-.
- Lift TV tuner - R78- -1- off bracket -2-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ➔ ["8.2.1 Overview of fitting locations - TV system, up to model year 2014", page 218](#)
- ◆ ➔ ["8.2.2 Overview of fitting locations - TV system, Japan, up to model year 2014", page 220](#)



8.4.2 Removing and installing digital TV tuner - R78- - up to model year 2014

Special tools and workshop equipment required



- ◆ Protective cap for cable connector - VAS 6223/9-



- ◆ Torque screwdriver - V.A.G 1624-



The digital TV tuner - R171- -1- is located behind the luggage compartment trim (left-side) in the rack.

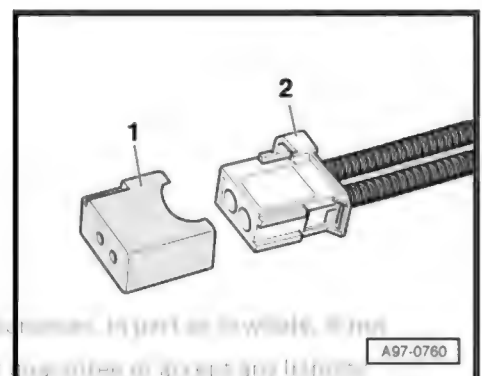
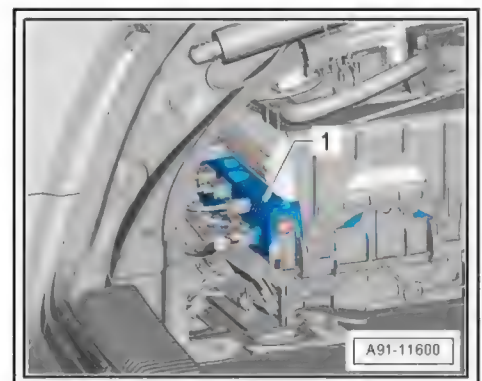


Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ⇒ Vehicle diagnostic tester.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Open left storage compartment in luggage compartment.
- Remove bracket with sound amplifiers:
- ◆ BOSE ⇒ [page 60](#)
- ◆ Bang & Olufsen ⇒ [page 64](#)
- Release and unplug connectors on digital TV tuner - R78- .
- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



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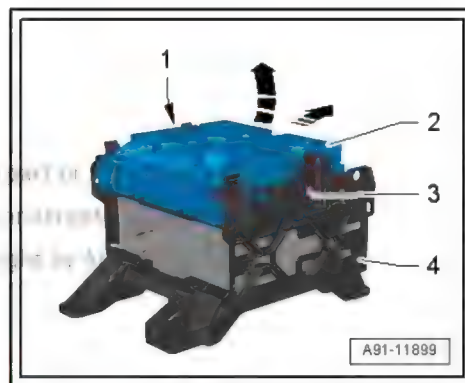
- Remove bolts -1- and -3- from digital TV tuner - R78- -2-.
- First swivel the digital TV tuner - R78- -2- upwards -arrow-, then pull TV tuner to rear -arrow- out of bracket -4-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["8.2.1 Overview of fitting locations - TV system, up to model year 2014", page 218](#)
- ◆ ⇒ ["8.2.2 Overview of fitting locations - TV system, Japan, up to model year 2014", page 220](#)



8.4.3 Removing and installing TV tuner - R78- - from model year 2015 onwards

Special tools and workshop equipment required

- ◆ Protective cap for cable connector - VAS 6223/9-



- ◆ Torque screwdriver - V.A.G 1624-





The TV tuner - R78- -1- is located in the luggage compartment recess (left-side). It is located behind the sound amplifiers.



Note

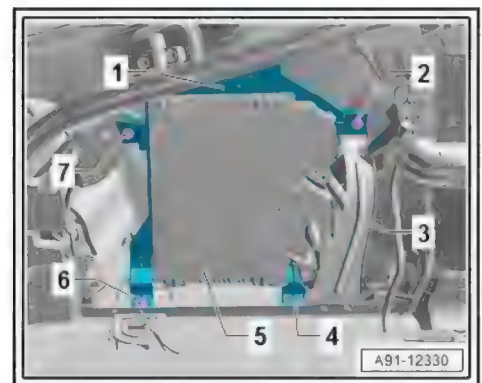
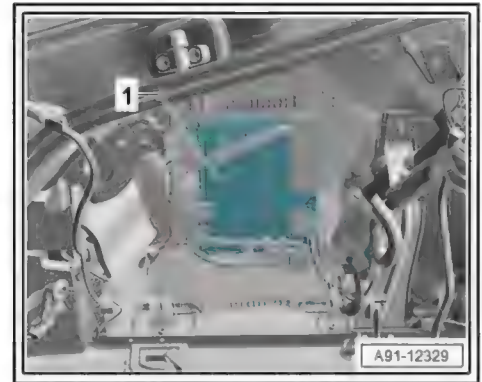
If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ⇒ Vehicle diagnostic tester.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Open left storage compartment in luggage compartment.

First remove bracket together with digital sound package control unit - J525- .

- Unscrew nuts -2, 4, 6, 7- at bracket -1- and swivel digital sound package control unit - J525- -5- with bracket -1- to side.



TV tuner - R78- is only wedged into bracket.

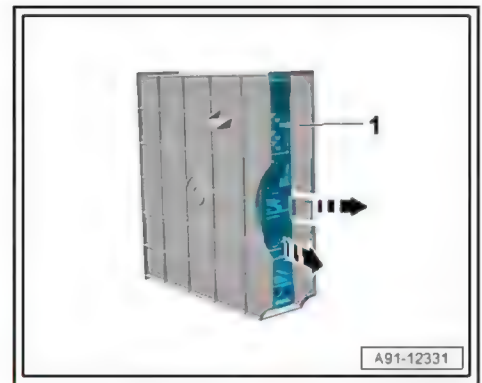
- Push lug and pull TV tuner - R78- -1- out of bracket in direction of -arrow-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["2.2.8 Overview of fitting locations - sound system, sound amplifiers, microphones \(Bang & Olufsen\), from model year 2015 onwards", page 56](#)
- ◆ ⇒ ["8.2.3 Overview of fitting locations - TV system, from model year 2015 onwards", page 221](#)



8.5 Removing and installing TV card reader

Special tools and workshop equipment required



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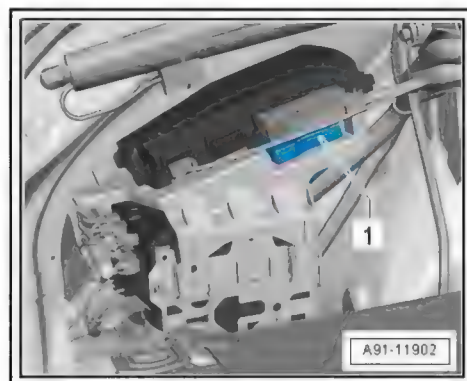


◆ Torque screwdriver - V.A.G 1624-



The TV card reader - R204- -1- is located behind the luggage compartment trim (left-side) in the rack.

BOSE sound system



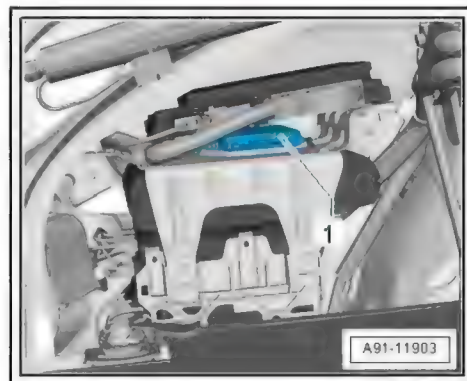
Bang & Olufsen

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Open left storage compartment in luggage compartment.

BOSE sound system

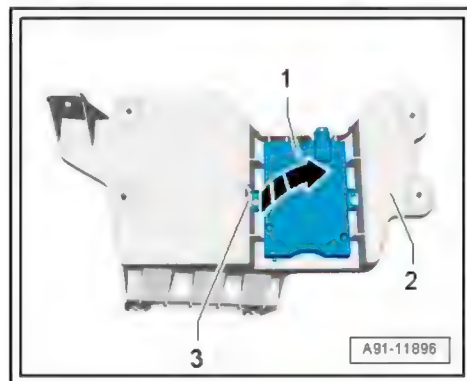
- Remove digital sound package control unit - J525- BOSE (MMI) ➔ [page 60](#) .
- Release and unplug connector at TV card reader - R204- .



The TV card reader - R204- -1- is clipped into the bracket -2-.

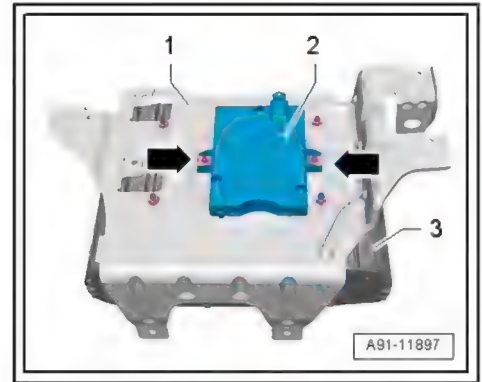
- Push retaining tab -3- upwards and swivel TV card reader - R204- -1- upwards -arrow- out of bracket -2-.

Bang & Olufsen





The digital sound package control unit 2 - J787- -3- conceals the bolts -arrows- on the TV card reader - R204- -2-.



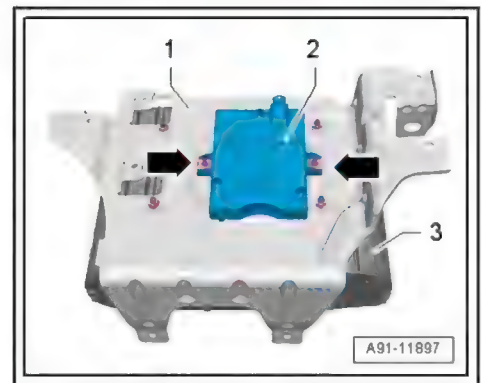
- Remove digital sound package control unit 2 - J787- -3-
⇒ [page 67](#) .
- Release and unplug connector at TV card reader - R204- -2-.
- Unscrew bolts -arrows- at TV card reader - R204- -2- and detach it from bracket -1-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ◆ ⇒ ["8.2.2 Overview of fitting locations - TV system, Japan, up to model year 2014"](#), [page 220](#)



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9 Reversing camera system

⇒ ["9.1 Layout - reversing camera system", page 236](#)

⇒ ["9.2 Overview of fitting locations - reversing camera system", page 238](#)

⇒ ["9.3 Removing and installing reversing camera R189 ", page 239](#)

⇒ ["9.4 Calibrating reversing camera system", page 242](#)

⇒ ["9.5 Removing and installing reversing camera system control unit J772 ", page 247](#)

9.1 Layout - reversing camera system

⇒ ["9.1.1 Layout - reversing camera system, up to model year 2016", page 236](#)

⇒ ["9.1.2 Layout - reversing camera system, from model year 2017 onwards", page 237](#)

9.1.1 Layout - reversing camera system, up to model year 2016

The reversing camera system (KA2) provides assistance to the driver when driving the vehicle backwards; the information about the prevailing traffic conditions behind the vehicle is supplied to the driver via the display unit for front information display and operating unit control unit - J685- .

The system will be switched on as soon as reverse gear is engaged. The system can be activated manually by operating the parking aid button - E266- in the centre console (optional).

The reversing camera system consists of the following components:

- ◆ Reversing camera - R189-
- ◆ Reversing camera system control unit - J772-
- ◆ Control unit 1 for information electronics - J794-
- ◆ Steering wheel with steering angle sender - G85-

As an option, other control units may also be installed.

Do not fit an additional number plate on vehicles equipped with reversing camera system as this will impair the function of the reversing camera system.

Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.



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1 - Data bus diagnostic interface - J533- beneath rear seat bench

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Control unit 1 for information electronics - J794- in dash panel

4 - Multimedia system operating unit - E380- in centre console

5 - FBAS wire from reversing camera system control unit - J772-

6 - FBAS wire from reversing camera - R189-

7 - Reversing camera - R189- in rear lid

8 - Reversing camera system control unit - J772- in luggage compartment (rear right)

9 - CAN bus, dash panel insert

10 - MOST bus

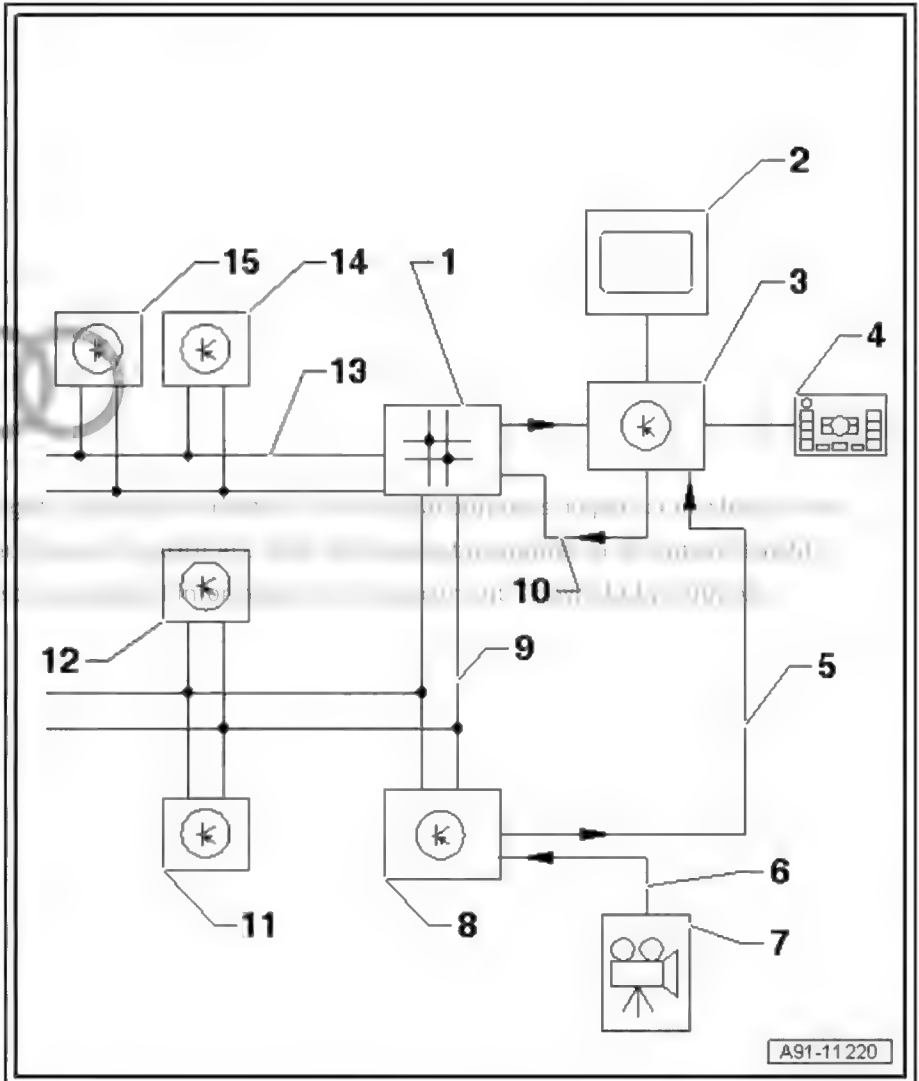
11 - Parking aid control unit - J446- in luggage compartment (rear right)

12 - Control unit in dash panel insert - J285- in dash panel

13 - Drive train CAN bus

14 - ABS control unit - J104- in engine compartment

15 - Steering angle sender - G85- on steering column at steering column electronics control unit - J527-



9.1.2 Layout - reversing camera system, from model year 2017 onwards

The reversing camera system (KA2) provides assistance to the driver when driving the vehicle backwards in both parallel and perpendicular parking manoeuvres, while towing a trailer and when monitoring cross-traffic; the information about the prevailing traffic conditions behind the vehicle is supplied to the driver via the display unit for front information display and operating unit control unit - J685- .

The system will be switched on as soon as reverse gear is engaged. The system can be activated manually by operating the parking aid button - E266- in the dash panel (optional).

The reversing camera system consists of the following components:

- ◆ Reversing camera - R189-
- ◆ Reversing camera system control unit - J772- , integrated in reversing camera - R189-
- ◆ Control unit 1 for information electronics - J794-



- ◆ Display unit for front information display and operating unit control unit - J685-

As an option, other control units may also be installed.

Do not fit an additional number plate on vehicles equipped with reversing camera system as this will impair the function of the reversing camera system.

Fault finding is performed via the "Guided Fault Finding" function using ⇒ Vehicle diagnostic tester.

9.2 Overview of fitting locations - reversing camera system

⇒ ["9.2.1 Overview of fitting locations - reversing camera system, Saloon", page 238](#)

⇒ ["9.2.2 Overview of fitting locations - reversing camera system, Avant", page 239](#)

9.2.1 Overview of fitting locations - reversing camera system, Saloon

1 - Reversing camera system control unit - J772- , up to model year 2016

- ❑ Pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Removing and installing ⇒ [page 247](#)
- ❑ Calibration ⇒ [page 242](#)

2 - Rack

3 - Rack

4 - Nut

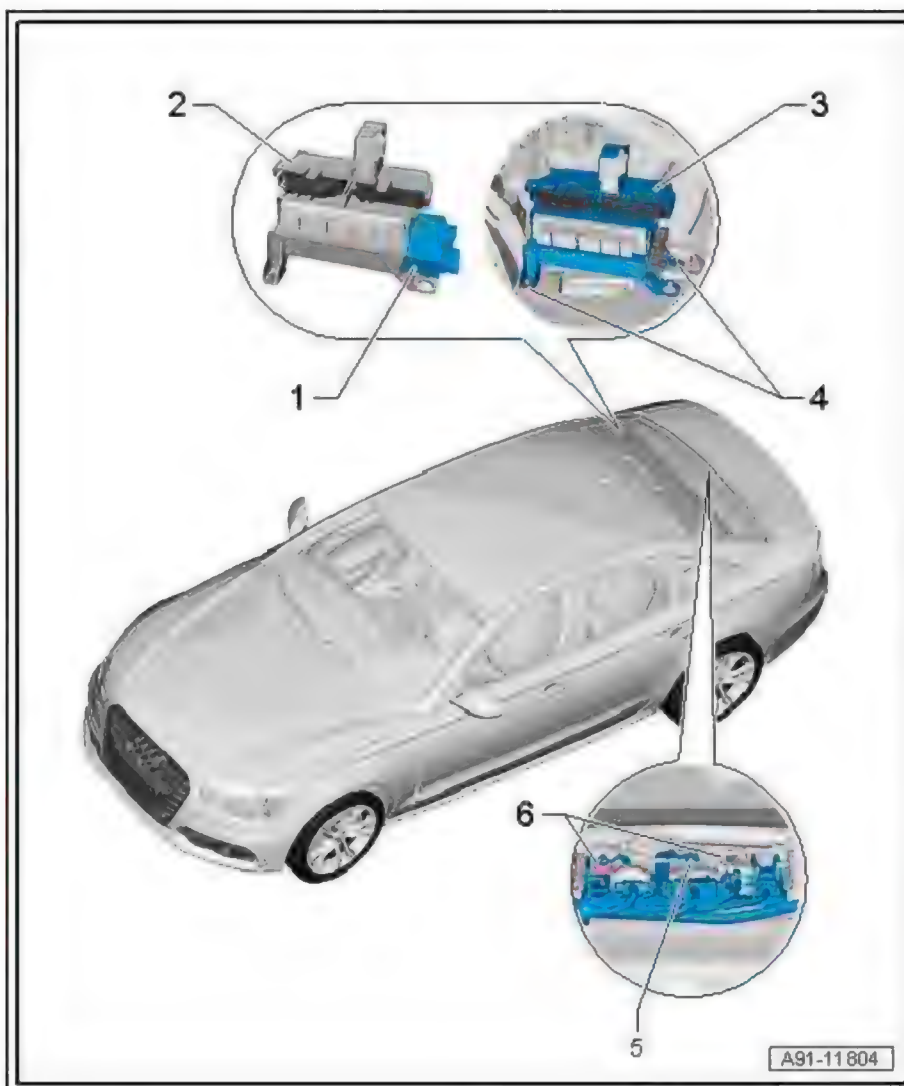
- ❑ 3 Nm

5 - Reversing camera - R189- , in handle

- ❑ From model year 2017 onwards with reversing camera system control unit - J772-
- ❑ Removing and installing ⇒ [page 239](#)
- ❑ Calibration ⇒ [page 242](#)

6 - Nut

- ❑ 6 Nm





9.2.2 Overview of fitting locations - reversing camera system, Avant

1 - Reversing camera system control unit - J772- , up to model year 2016

- ☐ Pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ☐ Removing and installing ⇒ [page 247](#)
- ☐ Calibration ⇒ [page 242](#)

2 - Rack

3 - Rack

4 - Nut

- ☐ 3 Nm

5 - Reversing camera - R189- , in handle

- ☐ From model year 2017 onwards with reversing camera system control unit - J772-
- ☐ Removing and installing ⇒ [page 240](#)
- ☐ Calibration ⇒ [page 242](#)

6 - Nut

- ☐ 6 Nm



9.3 Removing and installing reversing camera - R189-

⇒ [“9.3.1 Removing and installing reversing camera R189 - Saloon”, page 239](#)

⇒ [“9.3.2 Removing and installing reversing camera R189 - Avant”, page 240](#)

9.3.1 Removing and installing reversing camera - R189- - Saloon

Special tools and workshop equipment required

◆ Torque screwdriver - V.A.G 1624-



Reversing camera - R189- is installed in rear lid in handle and is permanently fitted in handle.

When renewing the reversing camera - R189- the handle must also be renewed.

- Switch off ignition and all electrical equipment, and remove ignition key.

Removing

The reversing camera - R189- is equipped with a trailing cable. The connectors to the vehicle wiring harness are located in the rear lid.

- Remove rear lid trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing rear lid trim (bottom) .
- Release and unplug connectors -1-, -2- and -3- in rear lid.

Reversing camera - R189- is permanently fitted in handle.

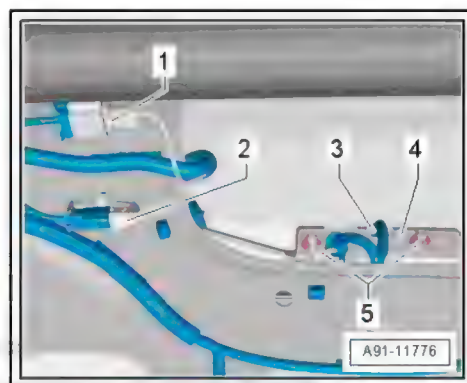
- Remove nuts -5-.



Note

Depending on the country version, it may be necessary to remove the number plate or number plate holder.

- Release catches (left and right) on handle -4- and pull it out of bracket in rear lid together with reversing camera - R189-



Installing

- Installation is carried out in reverse sequence; note the following:
- Close rear lid.
- Perform calibration ⇒ [page 242](#) .

Tightening torques

- ◆ ⇒ ["9.2.1 Overview of fitting locations - reversing camera system, Saloon", page 238](#)

9.3.2 Removing and installing reversing camera - R189- - Avant

Special tools and workshop equipment required



◆ Torque screwdriver - V.A.G 1624-



Reversing camera - R189- is installed in rear lid in handle and is permanently fitted in handle.

When renewing the reversing camera - R189- the handle must also be renewed.

- Switch off ignition and all electrical equipment, and remove ignition key.

Removing

The reversing camera - R189- is equipped with a trailing cable. The connectors to the vehicle wiring harness are located in the rear lid.

- Remove rear lid trim (bottom) ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing rear lid trim (bottom) .
- Release and unplug connectors -1-, -2- and -4- in rear lid.

Reversing camera - R189- is permanently fitted in handle -3-.

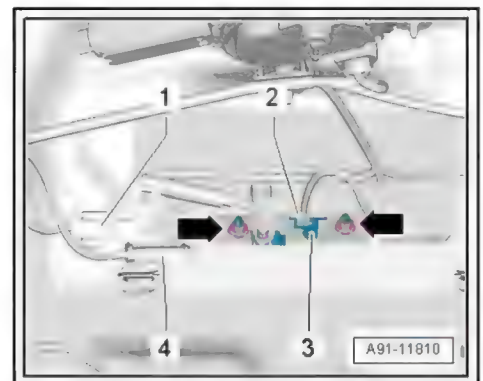
- Remove nuts -arrows-.



Note

Depending on the country version, it may be necessary to remove the number plate or number plate holder.

- Release catches (left and right) on handle -3- and pull it out of bracket in rear lid together with reversing camera - R189- .



Installing

- Installation is carried out in reverse sequence; note the following:
- Close rear lid.
- Perform calibration ⇒ [page 242](#) .

Tightening torques

- ◆ ⇒ ["9.2.2 Overview of fitting locations - reversing camera system, Avant", page 239](#)



9.4 Calibrating reversing camera system

⇒ "9.4.1 Setting up and aligning calibration unit VAS 6350", page 242

⇒ "9.4.2 Calibrating reversing camera R189", page 244

9.4.1 Setting up and aligning calibration unit - VAS 6350-

After performing service work on the vehicle it may be necessary to re-calibrate the reversing camera system. This is required after:

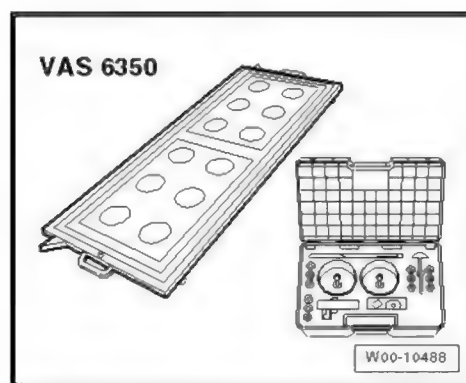
- ◆ Removing and installing reversing camera - R189-
- ◆ Renewing reversing camera system control unit - J772- (only vehicles with reversing camera system control unit - J772-)
- ◆ Performing accident repair work on rear lid
- ◆ Changes to wheel alignment on rear axle

Requirements for calibration

- ◆ Camera lens must be clean.
- ◆ Vehicle must be positioned on a firm and even surface.
- ◆ There must be sufficient space around the vehicle.
- ◆ Parking brake must be activated.
- ◆ Steering wheel must be in centre position, wheels must be straight.
- ◆ All doors and the rear lid must be closed.
- ◆ There must not be anyone inside the vehicle.
- ◆ Vehicle must not be loaded (unladen weight).
- ◆ The battery charger must be connected.
- ◆ Switch on ignition before every calibration.

Special tools and workshop equipment required

- ◆ Calibration unit - VAS 6350-



- ◆ ⇒ Vehicle diagnostic tester
- ◆ Supplementary kit for Audi R8 - VAS 6350/5- for rims with large offset, e.g. Audi RS 6

The calibration unit -VAS 6350- consists of the following items:

- ◆ Wheel centre mounting -VAS 6350/1-
- ◆ Spacing laser - VAS 6350/2-
- ◆ Linear laser - VAS 6350/3-

Overview of calibration equipment - VAS 6350- when set up



1 - Wheel centre mounting - VAS 6350/1-

- ☐ With wheel bolt adapter and measuring paddle
- ☐ Use supplementary kit for Audi R8 - VAS 6350/5- for rims with large offset

2 - Wheel centre mounting - VAS 6350/1-

- ☐ With wheel bolt adapter and measuring paddle
- ☐ Use supplementary kit for Audi R8 - VAS 6350/5- for rims with large offset

3 - Locating bracket (right-side)

- ☐ Mounting for spacing laser - VAS 6350/2-

4 - Plastic foot

- ☐ Three on underside of calibration platform
- ☐ Adjustable, for aligning horizontal position of calibration platform

5 - Linear laser - VAS 6350/3-

- ☐ On calibration platform
- ☐ Switching on and off ➔ Owner's Manual

6 - Spacing laser - VAS 6350/2-

- ☐ On calibration platform

7 - Spirit level

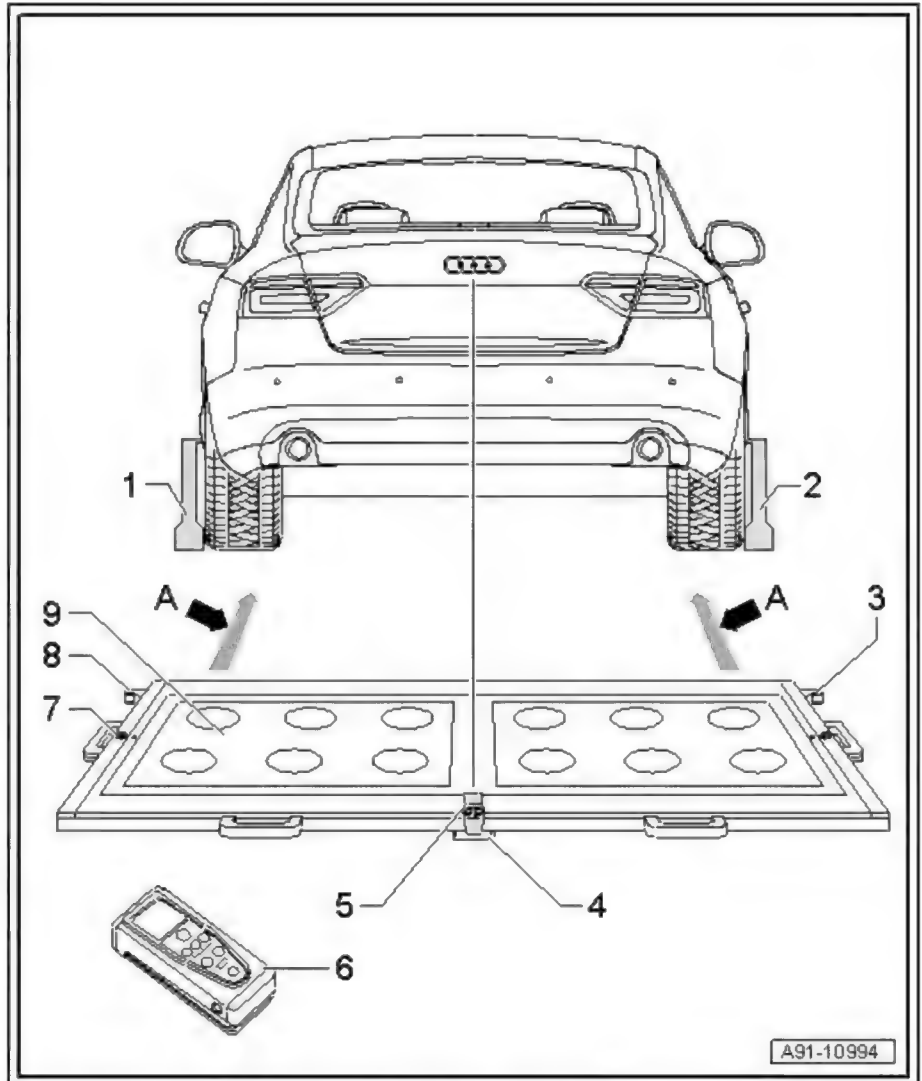
- ☐ On calibration platform
- ☐ For checking horizontal position

8 - Locating bracket (left-side)

- ☐ Mounting for spacing laser - VAS 6350/2-

9 - Calibration platform

- ☐ -Dimension A- = 1.47 m - 1.90 m between locating brackets of calibration platform and wheel centre mountings - VAS 6350/1-



Aligning calibration platform

- Position calibration platform behind vehicle at a distance of 1.47 m - 1.90 m from rear wheels, refer to -dimension A- in overview ➔ [page 242](#) .
- Move calibration unit - VAS 6350- to a horizontal position.

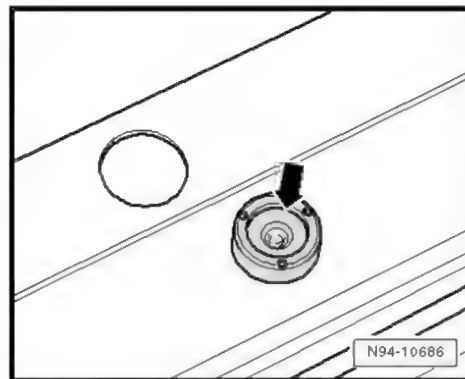
- To do so, turn plastic feet beneath calibration platform to make air bubble in spirit level move exactly to centre of display -arrow-.



WARNING

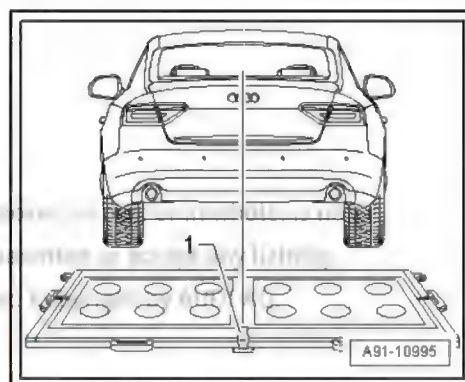
Make sure no light is reflected on calibration platform.

Reflected light impairs the view of the reversing camera - R189- and therefore it may be impossible to perform calibration.



- Switch on linear laser - VAS 6350/3- -1- on calibration platform and align entire calibration unit - VAS 6350- so that laser beam shines onto centre of Audi rings on rear of vehicle.
- Check whether Audi rings are in centre on rear of vehicle and adjust laser beam accordingly.

Continue by calibrating reversing camera - R189- ➔ [page 244](#) .



9.4.2 Calibrating reversing camera - R189-

- Ensure requirements are met ➔ [page 242](#) .
- Connect ➔ Vehicle diagnostic tester.

Fitting wheel centre mountings - VAS 6350/1-

- Check bolt circle of wheels.
- Prepare wheel centre mountings - VAS 6350/1- as required. Use spacers. Use supplementary kit for Audi R8 - VAS 6350/5- for rims with large offset.
- To do so, secure three wheel bolt adapters to each wheel centre mounting - VAS 6350/1- to match the hole circle.
- Position paddles on both wheel centre mountings - VAS 6350/1- and secure each paddle with clamping bolt.
- Fit wheel centre mountings - VAS 6350/1- onto wheel bolts on rear wheels.

The wheel centre mountings - VAS 6350/1- are kept in position by the O-rings in the adapters.



Note

When fitting the wheel centre mountings - VAS 6350/1- onto the wheels, make sure that they are not mounted on any "anti-theft" wheel bolts that might be installed.

- Use clamping bolts to adjust paddles so that they are free to move just slightly above the ground. Make sure the paddles can move freely.
- Set up and align calibration unit - VAS 6350- ➔ [page 242](#) .

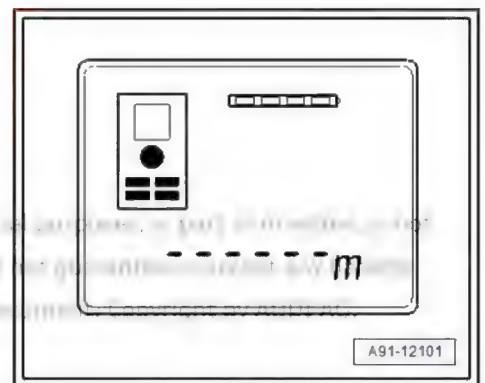
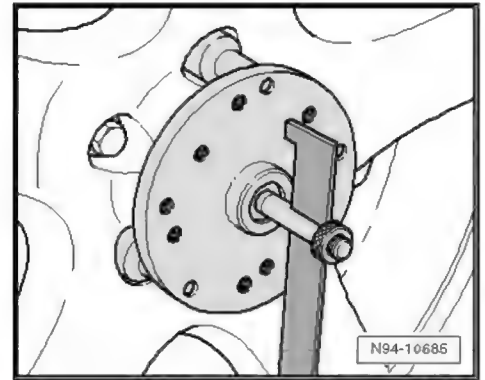
Measuring dimension

- Switch on spacing laser - VAS 6350/2- .

The following display will appear.

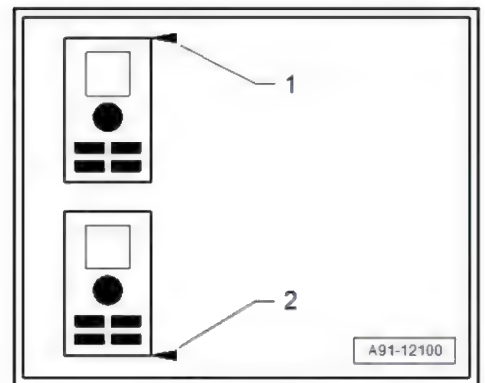


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The display will show how the spacing laser - VAS 6350/2- should be positioned. Press the appropriate key.

- 1 - Position at front edge
- 2 - Position at rear edge



- Hold spacing laser - VAS 6350/2- -2- on one side of calibration platform so that it is flush at bracket (position rear edge against bracket). Spacing laser - VAS 6350/2- -2- must make firm contact with bracket.

- Briefly press the measurement button.

The laser will switch on.

- Laser beam from spacing laser - VAS 6350/2- -2- must hit lower, larger part of paddle -1-.

If this is not the case, position of paddles must be corrected accordingly using clamping bolts on wheel centre mounting - VAS 6350/1- .

- Hold spacing laser - VAS 6350/2- in locating bracket on calibration unit - VAS 6350- with one hand while laser beam is visible on paddle.
- Now press measurement button briefly to measure distance.
- Note down the measured value.
- Perform same measuring procedure for rear wheel on other side of calibration unit - VAS 6350- .

Measured distance value must be identical on both sides.

If values are not identical:

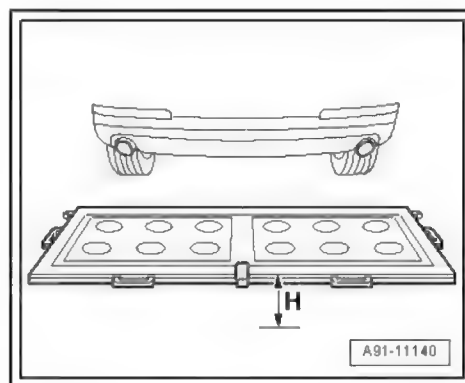
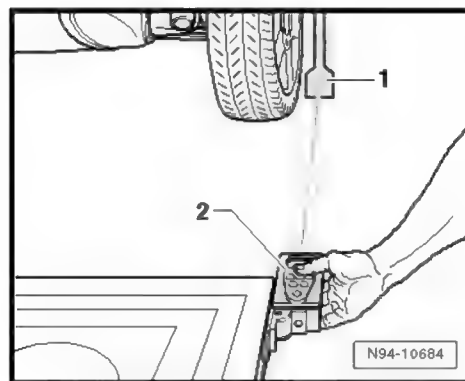
- Adjust calibration unit - VAS 6350- until values on both sides are identical.

When adjusting calibration unit - VAS 6350- , make sure that linear laser - VAS 6350/3- on calibration unit - VAS 6350- still hits centre of Audi rings and spirit level display also remains in the centre. Correct if necessary.

Measuring dimension -H-

- Measure height of calibration unit - VAS 6350- : dimension -H- (top edge of platform - floor).

Ensure that spacing laser - VAS 6350/2- is correctly adjusted (position at front edge).





The display will show how the spacing laser - VAS 6350/2- should be positioned. Press the appropriate key.

- 1 - Position at front edge
- 2 - Position at rear edge

Now enter measured distance value and height in millimetres in
⇒ Vehicle diagnostic tester.

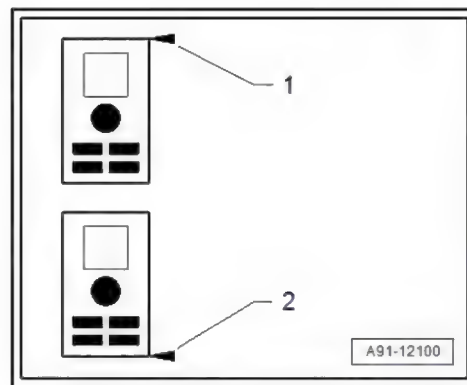
Performing calibration

⇒ Vehicle diagnostic tester must be connected.

- Select **Diagnosis** mode and begin diagnosis.
- Select **Test plan** tab.
- Choose **Select own test** and select following options one after the other:

- ◆ Body
- ◆ Electrical system
- ◆ 01 - Self-diagnosis compatible systems
- ◆ 6C - Reversing camera system/J772
- ◆ 6C - Reversing camera system control unit, functions
- ◆ 6C - Calibration (Rep. gr. 91)

Further instructions are given by ⇒ Vehicle diagnostic tester during calibration procedure.



WARNING

Make sure no light is reflected on calibration platform.

Reflected light impairs the view of the reversing camera - R189- and therefore it may be impossible to perform calibration.

9.5 Removing and installing reversing camera system control unit - J772-

⇒ ["9.5.1 Removing and installing reversing camera system control unit J772 - up to model year 2016", page 247](#)

⇒ ["9.5.2 Removing and installing reversing camera system control unit J772 - from model year 2017 onwards", page 249](#)

9.5.1 Removing and installing reversing camera system control unit - J772- - up to model year 2016

Special tools and workshop equipment required



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◆ Torque screwdriver - V.A.G 1624-



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The reversing camera system control unit - J772-1- is located behind the luggage compartment trim (right-side).



Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ⇒ Vehicle diagnostic tester.

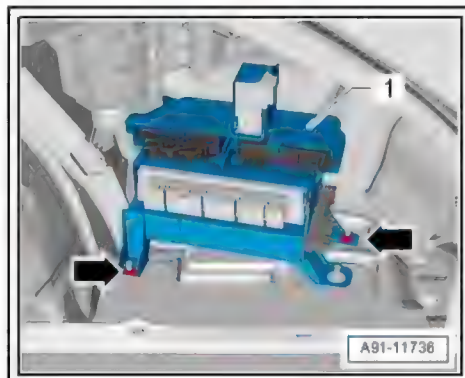
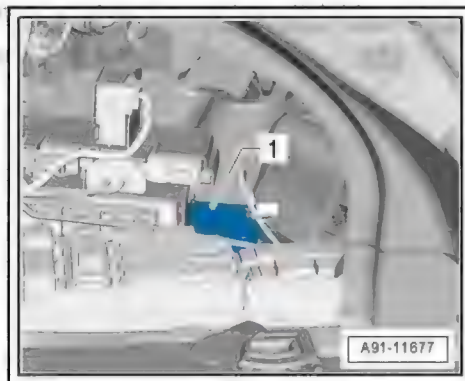
Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove luggage compartment side trim (right-side) ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing luggage compartment side trim .

The bracket must be removed prior to removing the reversing camera system control unit - J772- . The bracket is secured with bolts to the relay and fuse carrier F in the luggage compartment (right-side). Start by removing relay and fuse carrier F in luggage compartment (right-side) ⇒ Electrical system; Rep. gr. 97 ; Relay carriers, fuse carriers, electronics boxes; Overview of fitting locations - relay carriers, fuse carriers, electronics boxes .

Removing bracket

- Release and unplug all connectors on control units.
- Unscrew nuts -arrows- and remove bracket -1- together with control units from luggage compartment recess.





The reversing camera system control unit - J772- -1- is only clipped into the bracket -2-.

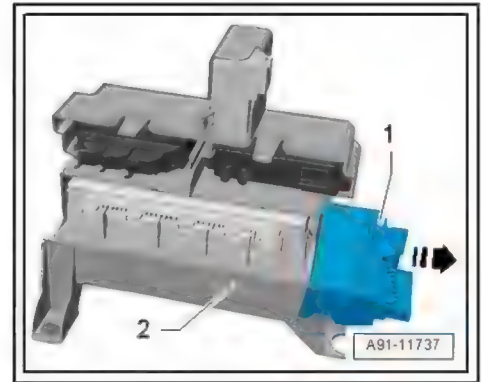
- Release and unplug connectors at reversing camera system control unit - J772- -1-.
- Push down catch and pull reversing camera system control unit - J772- -1- out of bracket -2-.

Installing

- Installation is carried out in reverse sequence; note the following:
- Perform calibration ➔ [page 242](#) .

Tightening torques

- ◆ ➔ ["9.2.1 Overview of fitting locations - reversing camera system, Saloon", page 238](#)
- ◆ ➔ ["9.2.2 Overview of fitting locations - reversing camera system, Avant", page 239](#)



9.5.2 Removing and installing reversing camera system control unit - J772- - from model year 2017 onwards

Reversing camera system control unit - J772- is integrated in reversing camera - R189- and cannot be renewed separately.



Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ➔ Vehicle diagnostic tester.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove reversing camera - R189- ➔ [page 239](#) .

Installing

- Install reversing camera - R189- ➔ [page 239](#) .
- Perform calibration ➔ [page 242](#) .



10 Multi-function steering wheel

⇒ ["10.1 Layout - multi-function steering wheel", page 250](#)

⇒ ["10.2 Exploded view - multi-function steering wheel", page 250](#)

⇒ ["10.3 Removing and installing multifunction buttons in steering wheel E441 / E440 ", page 252](#)

⇒ ["10.4 Removing and installing tiptronic switches in steering wheel E439 / E438 ", page 258](#)

10.1 Layout - multi-function steering wheel

Buttons are integrated in the steering wheel in order to make the infotainment, telephone and navigation systems easier to use. On vehicles with tiptronic, rocker switches are also fitted on the right and left side of the steering wheel.

The multi-function steering wheel control unit - J453- (in the right-side button) reads out the button information and transfers it to the steering column electronics control unit - J527- via the LIN data bus. From the steering column electronics control unit - J527- the information is transferred to the individual components via the CAN bus (convenience) and the data bus diagnostic interface - J533- .

Fault finding is performed via the "Guided Fault Finding" function using ⇒ Vehicle diagnostic tester.

10.2 Exploded view - multi-function steering wheel

⇒ ["10.2.1 Exploded view - multi-function steering wheel, 4-spoke steering wheel", page 250](#)

⇒ ["10.2.2 Exploded view - multi-function steering wheel, 3-spoke steering wheel", page 252](#)

10.2.1 Exploded view - multi-function steering wheel, 4-spoke steering wheel



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1 - Tiptronic switch in steering wheel to shift down - E439-

- ❑ Removing and installing
⇒ [page 258](#)

2 - 4-spoke steering wheel

3 - Tiptronic switch in steering wheel to shift up - E438-

- ❑ Removing and installing
⇒ [page 258](#)

4 - Bolt

- ❑ 1 Nm

5 - Multifunction buttons on right in steering wheel - E441-

- ❑ Removing and installing
⇒ [page 252](#)

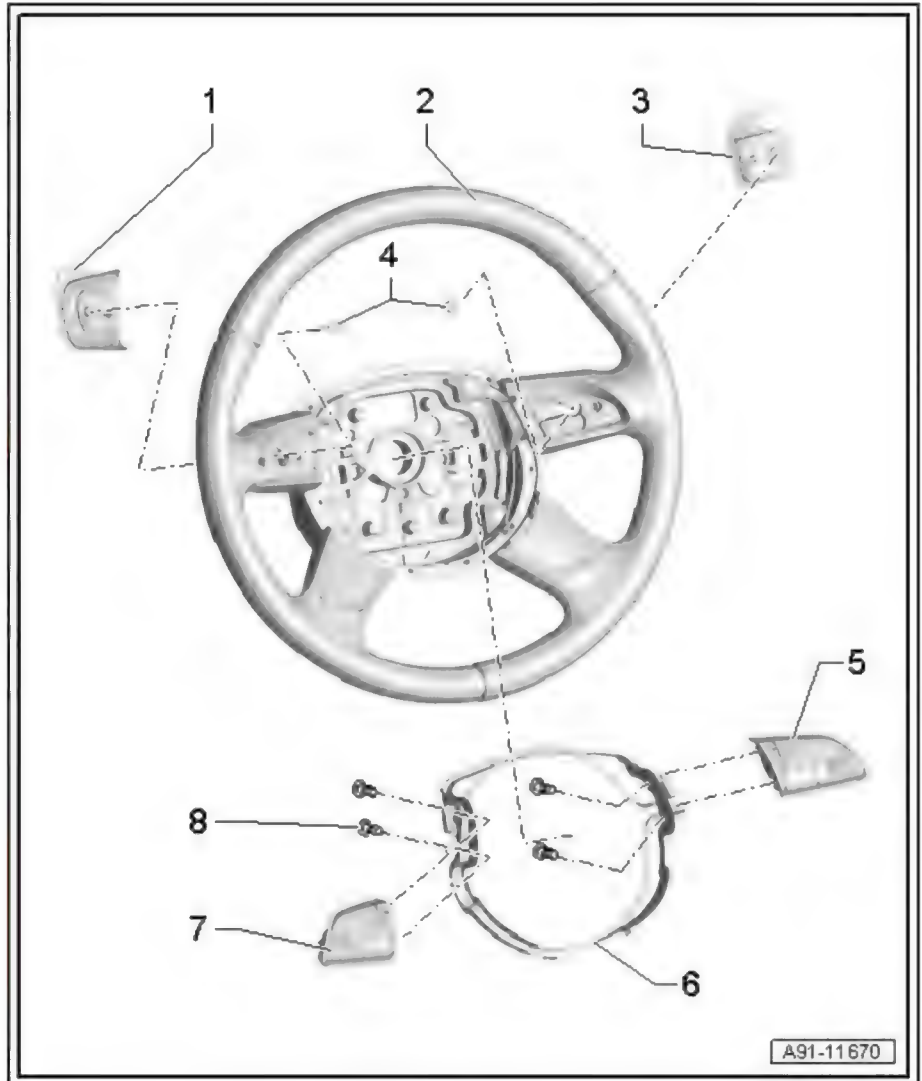
6 - Trim panel

7 - Multifunction buttons on left in steering wheel - E440-

- ❑ Removing and installing
⇒ [page 252](#)

8 - Bolt

- ❑ 1 Nm



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10.2.2 Exploded view - multi-function steering wheel, 3-spoke steering wheel

1 - Tiptronic switch in steering wheel to shift down - E439-

- ❑ Removing and installing
⇒ [page 258](#)

2 - 3-spoke steering wheel

3 - Tiptronic switch in steering wheel to shift up - E438-

- ❑ Removing and installing
⇒ [page 258](#)

4 - Bolt

- ❑ 1 Nm

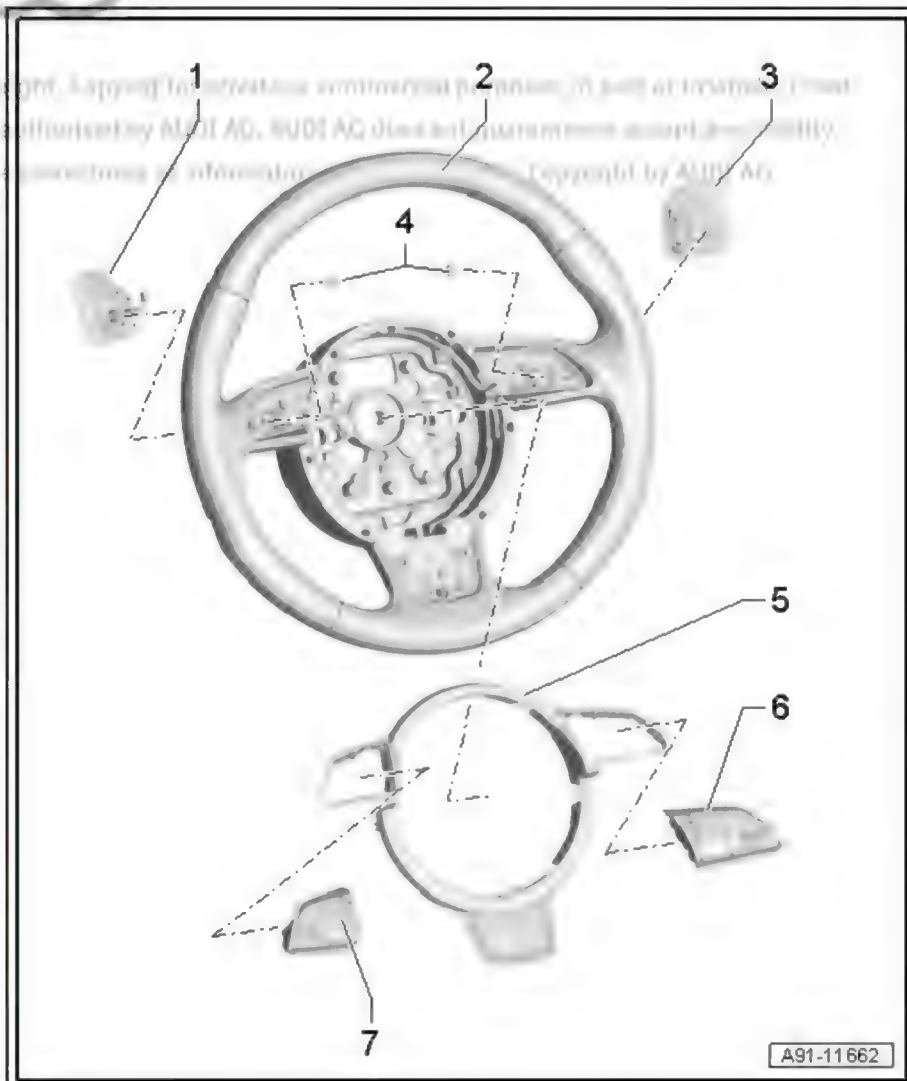
5 - Trim panel

6 - Multifunction buttons on right in steering wheel - E441-

- ❑ Removing and installing
⇒ [page 255](#)

7 - Multifunction buttons on left in steering wheel - E440-

- ❑ Removing and installing
⇒ [page 255](#)



10.3 Removing and installing multifunction buttons in steering wheel -E441- / -E440-

⇒ "10.3.1 Removing and installing multifunction buttons - 4-spoke steering wheel", [page 252](#)

⇒ "10.3.2 Removing and installing multifunction buttons - 3-spoke steering wheel", [page 255](#)

10.3.1 Removing and installing multifunction buttons - 4-spoke steering wheel

Special tools and workshop equipment required



◆ Removal wedge - 3409-

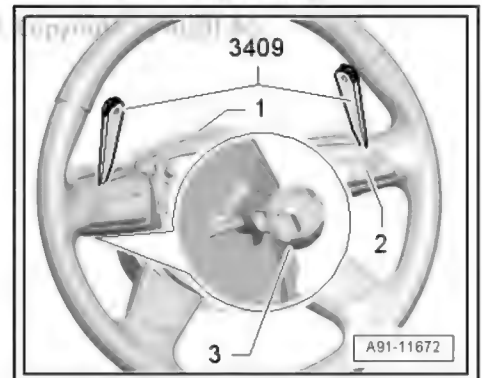


◆ Torque screwdriver - V.A.G 1624-



The multifunction buttons -2- are bolted to the trim panel -1-. The trim panel -1- is secured on the steering wheel together with the multifunction buttons -2-. Each multifunction button -2- has an extra retainer -3-.

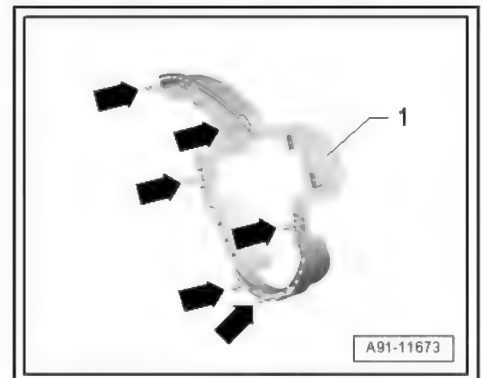
When removing, ensure that you loosen trim panel -1- by hand first (approx. 5 mm). Then disengage retainers -3- for multifunction buttons -2- using removal wedge - 3409- and, finally, pull off trim panel -1- together with multifunction buttons -2-.



Retainers for trim panel

1 - Trim panel

Arrows - retainers



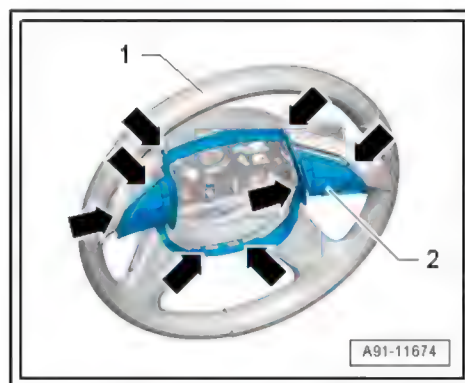
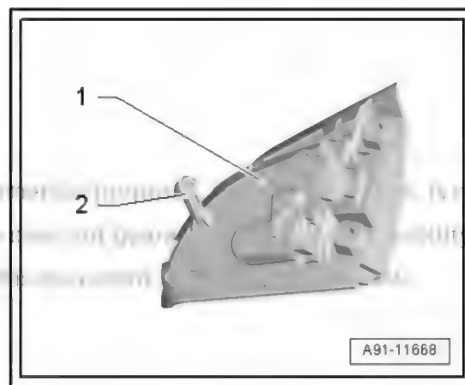
Retainer for multifunction buttons

- 1 - Multifunction button
- 2 - Retainer

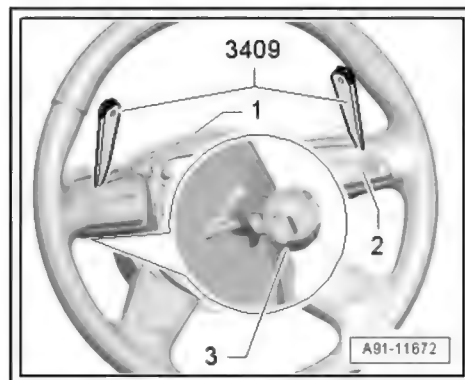
- Switch off ignition and all electrical equipment, and remove ignition key.

Removing

- Remove airbag (driver side) ⇒ General body repairs, interior; Rep. gr. 69 ; Airbag (driver side); Removing and installing air-bag unit with igniters .
- Take connecting wires out of their guides in steering wheel.
- Slightly loosen trim panel -2- together with multifunction buttons -arrows- by hand and pull it out of steering wheel -1- (by approx. 5 mm).



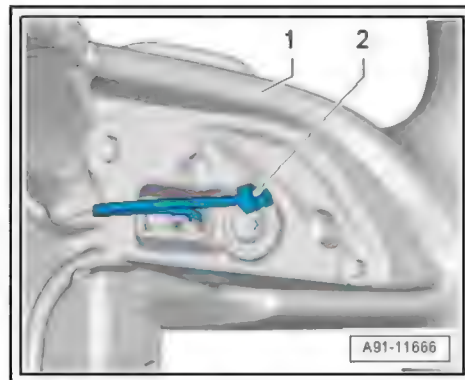
- Disengage multifunction buttons -2- in area of retainers -3- using removal wedge - 3409- . Apply removal wedge - 3409- as shown in illustration.



- At the same time, pay attention to connectors leading to tip-tronic switches -2-.
- Release and unplug connector -2- at multifunction buttons.
- Detach trim panel together with multifunction buttons from steering wheel.

The multifunction buttons are bolted to the trim panel.

- Release and unplug connector on multifunction button.

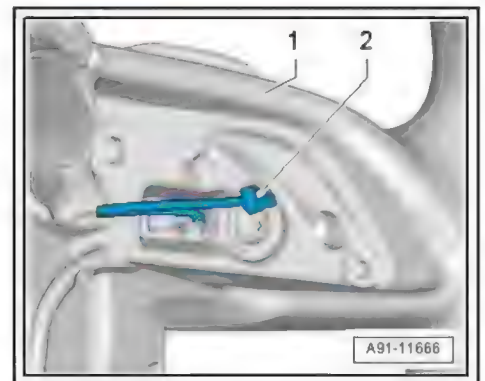
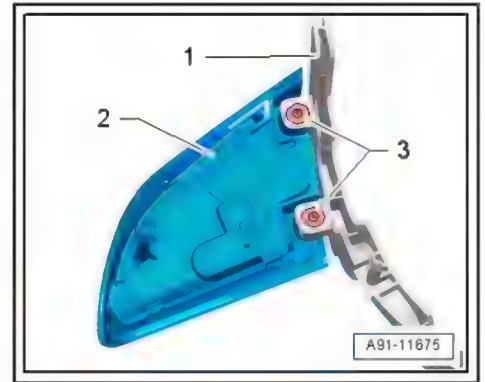


- Remove bolts -3- and press multifunction button -2- out of trim panel -1-.

The additional wiring on the multifunction button (right-side) remains attached to the multifunction button.

Installing

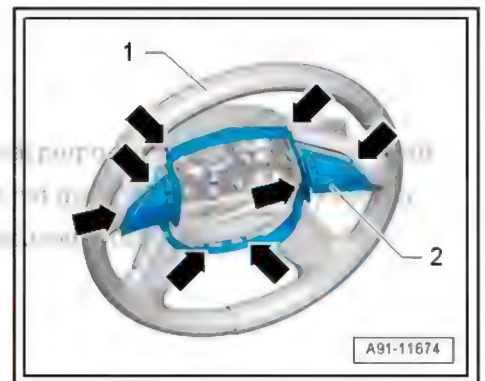
- Installation is carried out in reverse sequence; note the following:
- Position trim panel on steering wheel with multifunction buttons fitted.
- Ensure connecting wiring -2- for tiptronic switches is routed as shown in illustration.
- Route remaining connecting wiring, including connectors, through guides in steering wheel.



- Push trim panel -2- together with multifunction buttons onto steering wheel -1- until they engage properly.
- Finally, check again that wiring in steering wheel is correctly routed.

Tightening torques

- ◆ ⇒ ["10.2.1 Exploded view - multi-function steering wheel, 4-spoke steering wheel", page 250](#)



10.3.2 Removing and installing multifunction buttons - 3-spoke steering wheel

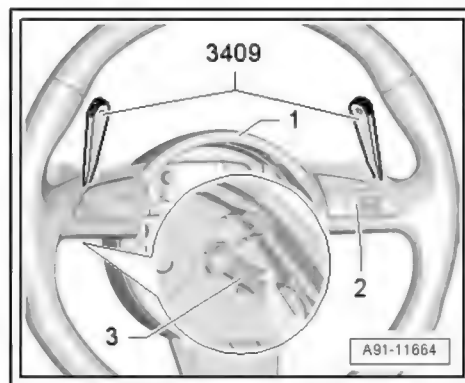
Special tools and workshop equipment required

- ◆ Removal wedge - 3409-



The multifunction buttons -2- are clipped into the trim panel -1-. The trim panel -1- is secured on the steering wheel together with the multifunction buttons -2-. Each multifunction button -2- has an extra retainer -3-.

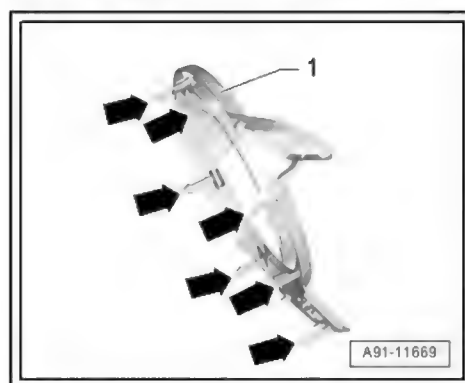
When removing, ensure that you loosen trim panel -1- by hand first (approx. 5 mm). Then disengage retainers -3- for multifunction buttons -2- using removal wedge - 3409- and, finally, pull off trim panel -1- together with multifunction buttons -2-.



Retainers for trim panel

1 - Trim panel

Arrows - retainers



Retainer for multifunction buttons

1 - Multifunction button

2 - Retainer

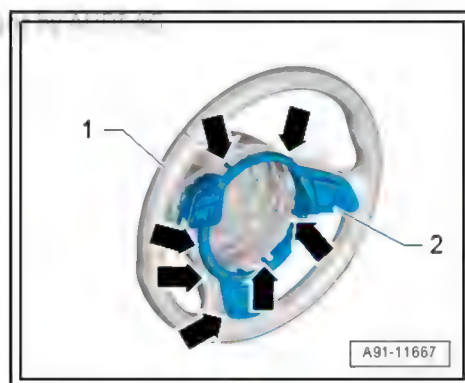
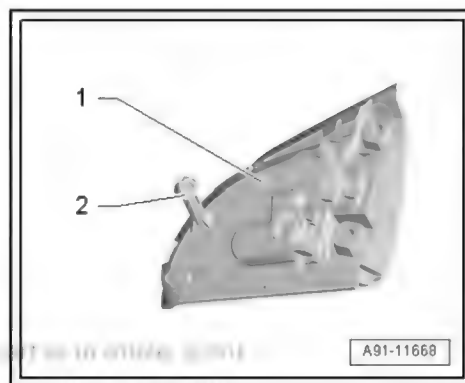
- Switch off ignition and all electrical equipment, and remove ignition key.

Removing

- Remove airbag (driver side) ⇒ General body repairs, interior; Rep. gr. 69 ; Airbag (driver side); Removing and installing airbag unit with igniters .

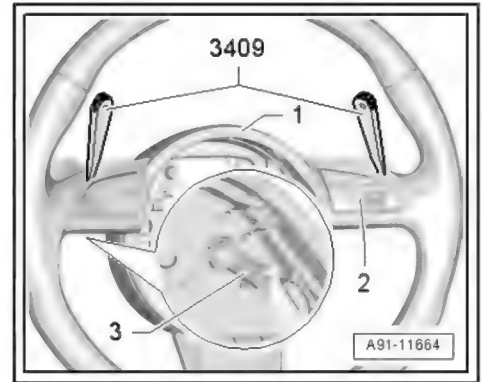
- Take connecting wires out of their guides in steering wheel.

- Slightly loosen trim panel -2- together with multifunction buttons -arrows- by hand and pull it out of steering wheel -1- (by approx. 5 mm).



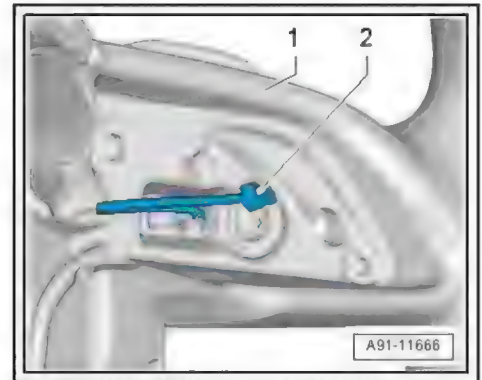
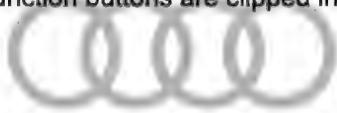


- Disengage multifunction buttons -2- in area of retainers -3- using removal wedge - 3409- . Apply removal wedge - 3409- as shown in illustration.



- At the same time, pay attention to connectors leading to tiptronic switches -2-.
- Release and unplug connector -2- at multifunction buttons.
- Detach trim panel together with multifunction buttons from steering wheel.

The multifunction buttons are clipped into the trim panel.

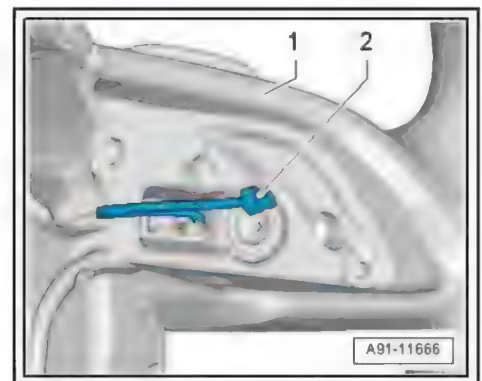
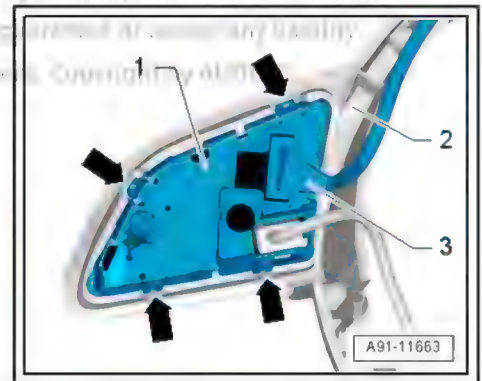


- Release and unplug connector -3- at multifunction button -1-.
- Release clips -arrows- and press multifunction button -1- out of trim panel -2-.

The additional wiring on the multifunction button (right-side) remains attached to the multifunction button.

Installing

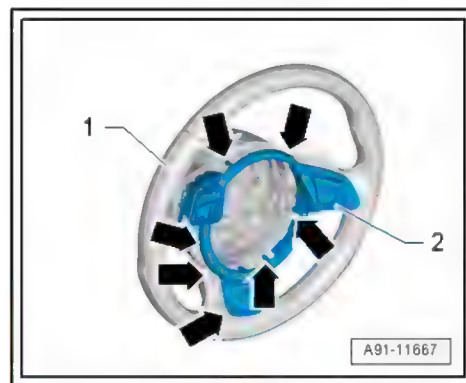
- Installation is carried out in reverse sequence; note the following:
- Position trim panel on steering wheel with multifunction buttons fitted.
- Ensure connecting wiring -2- for tiptronic switches is routed as shown in illustration.
- Route remaining connecting wiring, including connectors, through guides in steering wheel.



- Push trim panel -2- together with multifunction buttons onto steering wheel -1- until they engage properly.
- Finally, check again that wiring in steering wheel is correctly routed.

Tightening torques

- ♦ ⇒ ["10.2.2 Exploded view - multi-function steering wheel, 3-spoke steering wheel", page 252](#)



10.4 Removing and installing tiptronic switches in steering wheel -E439- / -E438-

Special tools and workshop equipment required

- ♦ Torque screwdriver - V.A.G 1624-



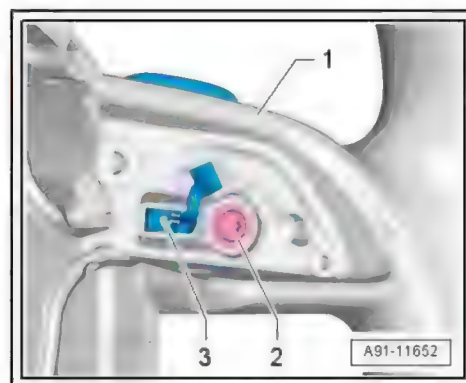
- Switch off ignition and all electrical equipment, and remove ignition key.

Removing

- Remove trim panel with multifunction buttons: 4-spoke steering wheel ⇒ [page 252](#) , 3-spoke steering wheel ⇒ [page 255](#) .
- Remove bolt -2- on steering wheel -1- and detach tiptronic switch -3- with connecting wire towards rear.

Installing

- Installation is carried out in reverse sequence; note the following:

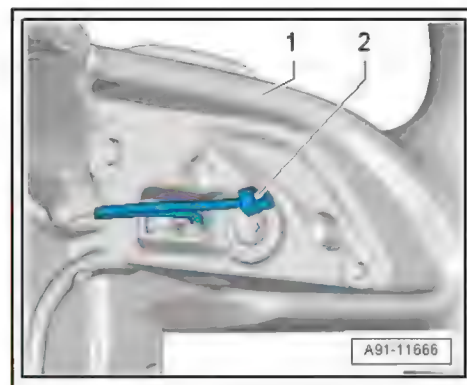




- Note position of connecting wire -2- to multifunction button.

Tightening torques

- ◆ ⇒ ["10.2.1 Exploded view - multi-function steering wheel, 4-spoke steering wheel", page 250](#)
- ◆ ⇒ ["10.2.2 Exploded view - multi-function steering wheel, 3-spoke steering wheel", page 252](#)



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11 Speech dialogue system

⇒ "11.1 Layout - speech dialogue system", page 260

⇒ "11.2 Removing and installing speech dialogue system", page 261

11.1 Layout - speech dialogue system

The speech dialogue system enables voice operation of the telephone, infotainment and navigation systems.

Functions can be conveniently operated by simple voice commands. The system is activated via the **talk** button on the multi-function steering wheel.

The speech dialogue system is integrated in the control unit 1 for information electronics - J794- .

Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

1 - Display unit for front information display and operating unit control unit - J685-

- ❑ In dash panel (centre)

2 - Multimedia system operating unit - E380-

- ❑ In centre console

3 - Control unit 1 for information electronics - J794-

- ❑ In dash panel
- ❑ Pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Removing and installing ⇒ [page 18](#)

4 - Data bus diagnostic interface - J533-

- ❑ Under rear seat bench
- ❑ Refer to ⇒ Electrical system; Rep. gr. 97 ; Control units; Exploded view - data bus diagnostic interface

5 - Steering column electronics control unit - J527-

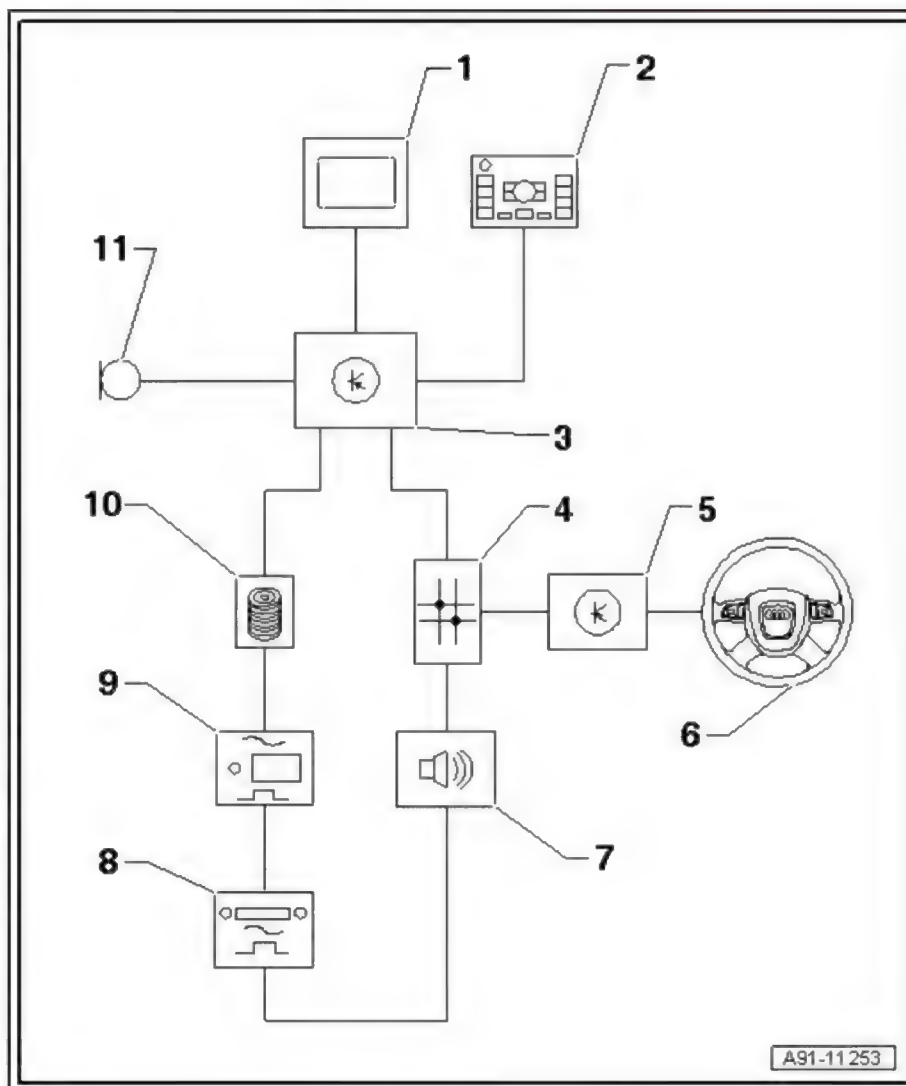
- ❑ On steering column at steering column switch
- ❑ Refer to ⇒ Electrical system; Rep. gr. 94 ; Steering column switch module; Exploded view - steering column switch module

6 - Multi-function steering wheel

- ❑ Removing and installing buttons ⇒ [page 252](#)

7 - Digital sound package control unit - J525-

- ❑ Behind luggage compartment trim (left-side)





8 - Radio - R-

- ☐ Behind luggage compartment trim (left-side)

9 - TV tuner - R78-

- ☐ Behind luggage compartment trim (left-side)

10 - DVD changer - R161-

- ☐ In glove box

11 - Microphone unit in front roof module - R164-

- ☐ Overview ➔ [page 170](#)

11.2 Removing and installing speech dialogue system

The speech dialogue system is part of the control unit 1 for information electronics - J794- in the dash panel. It cannot be renewed separately.

In the event of a defect, the control unit 1 for information electronics - J794- must be renewed.



Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ➔ Vehicle diagnostic tester.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove control unit 1 for information electronics - J794- ➔ [page 18](#) .

Installing

- Install control unit 1 for information electronics - J794- ➔ [page 18](#) .

Perform following functional check:

- Switch on radio - R- .
- Briefly press the **[talk]** button on the multi-function steering wheel.

A "BEEP" tone should sound; this indicates that speech dialogue system is activated.

- Say the command "HELP".

Since the radio - R- is activated, the speech dialogue system should respond with "Commands for the radio are ...".

Depending on equipment version, you can switch to other functions:

- If the vehicle is equipped with a telephone, say "TELEPHONE".

The speech dialogue system switches to the telephone mode.

- Press **[talk]** button for approx. 1 second.

The speech dialogue system responds with "Cancel" and is deactivated.

12 Connection for external multimedia devices

⇒ "12.1 Layout - connection for external multimedia devices", page 262

⇒ "12.2 Connectors on connection for external multimedia devices", page 264

⇒ "12.3 Removing and installing connection for external audio sources R199", page 269

12.1 Layout - connection for external multimedia devices

The connection for external audio sources - R199- is available in several versions:

- ◆ AMI (Audi music interface), UF7
- ◆ AMI (Audi music interface) - USB charging - AUX IN, UE4
- ◆ AMI (Audi music interface) - 2x USB connection, AUX-IN/ASI, UI2
- ◆ AMI (Audi music interface), rear

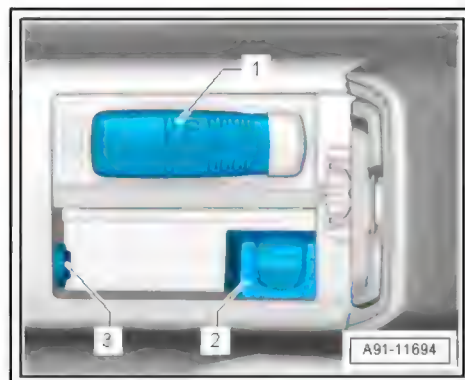
ASI - Audi smartphone interface

The connection for external audio sources - R199- is part of the control unit 1 for information electronics - J794- .

Fitting location of AMI - connection for external audio sources - R199- , front, UF7

The interface -2- (30-pin connector - T30b-) is located beneath the front centre armrest or in the storage compartment.

Various devices can be connected.



Fitting location of AMI - connection for external audio sources - R199- , front, USB charging, AUX-IN, UE4

The interface -1- is located beneath the front centre armrest.

The USB socket is used for charging USB devices.

Various devices can be connected to the AUX-IN socket. Appropriate adapter cables are required ⇒ Owner's Manual .



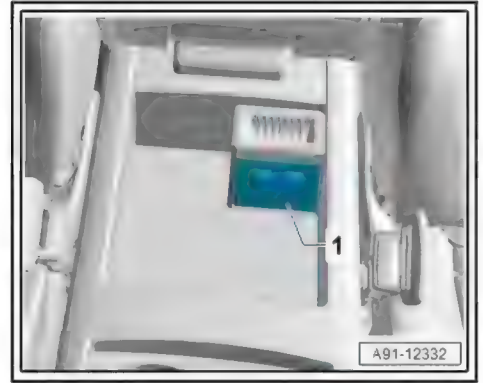


Fitting location of AMI - connection for external audio sources - R199- , front, 2x USB, AUX-IN, ASI, UI2

The interface -1- is located beneath the front centre armrest.

The USB sockets are fully wired. Various devices can be connected.

- ◆ iPod
- ◆ MP3 player
- ◆ USB sticks
- ◆ Smartphones
- ◆ Tablet PCs



Fitting location of AMI - connection 2 for external audio sources - R321- , rear

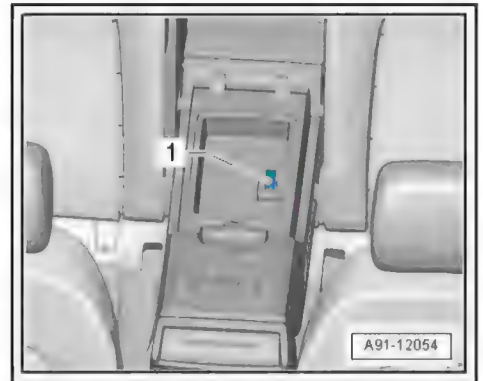
The connection 2 for external audio sources - R321- -1- is located in the rear centre armrest storage box.

The connection 2 for external audio sources - R321- is part of the control unit 2 for information electronics - J829- .

Various devices can be connected.

Appropriate adapter cables are required ⇒ Owner's Manual .

Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.



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12.2 Connectors on connection for external multimedia devices

⇒ "12.2.1 Pin assignment for connection for external audio sources R199 , UF7", page 264

⇒ "12.2.2 Pin assignment for connection for external audio sources R199 , USB charging, AUX-IN, UE4", page 265

⇒ "12.2.3 Pin assignment for connection for external audio sources R199 , 2x USB, AUX-IN, ASI, UI2", page 265

⇒ "12.2.4 Pin assignment for connection 2 for external audio sources R231 ", page 267

⇒ "12.2.5 Pin assignment for connection for external audio sources R199 , AMI, Japan", page 267

12.2.1 Pin assignment for connection for external audio sources - R199- , UF7



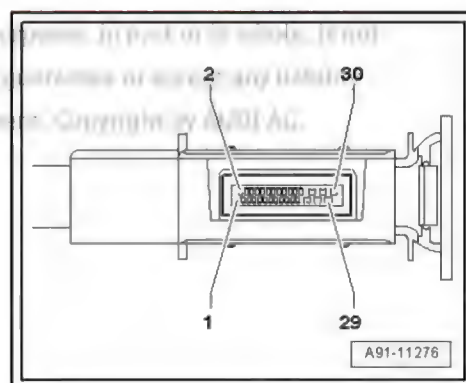
Note

Contacts which are not listed are not used.

30-pin connector - T30b-

All pins are connected to the control unit 1 for information electronics - J794- .

- 1 - NF in, left-side (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - Low frequency earth
- 4 - NF in, screen earth (low frequency)
- 13 - iPod data
- 14 - iPod data
- 16 - iPod detected
- 17 - D (+)
- 18 - D (-)
- 21 - Detect
- 22 - Earth
- 24 - FBAS wire (-)
- 25 - USB, earth
- 27 - FBAS wire (+)
- 28 - USB, +5 V





12.2.2 Pin assignment for connection for external audio sources - R199- , USB charging, AUX-IN, UE4

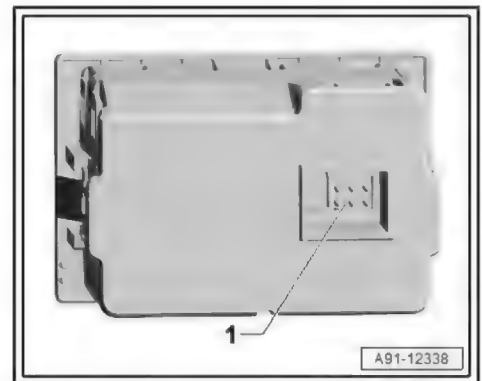


Note

Contacts which are not listed are not used.

Connection for external audio sources - R199-

1 - 6-pin connector - T6cf-



1 - 6-pin connector - T6cf-

1 - Terminal 30

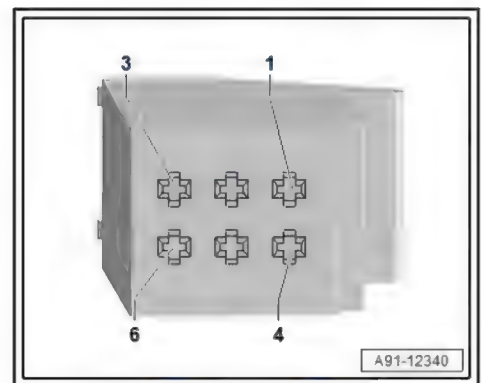
2 - Terminal 31

3 - USB, +5 V

4 - NF in, right-side (low frequency)

5 - Low frequency earth

6 - NF in, left-side (low frequency)



12.2.3 Pin assignment for connection for external audio sources - R199- , 2x USB, AUX-IN, ASI, UI2



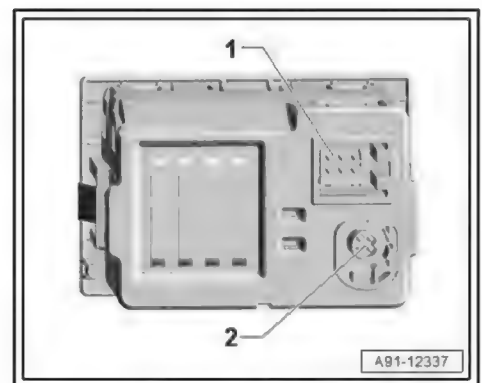
Note

Contacts which are not listed are not used.

Connection for external audio sources - R199-

1 - 6-pin connector - T6cf-

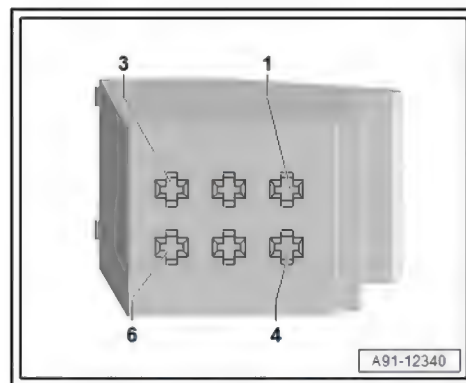
2 - 5-pin connector - T5bp-



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1 - 6-pin connector - T6cf-

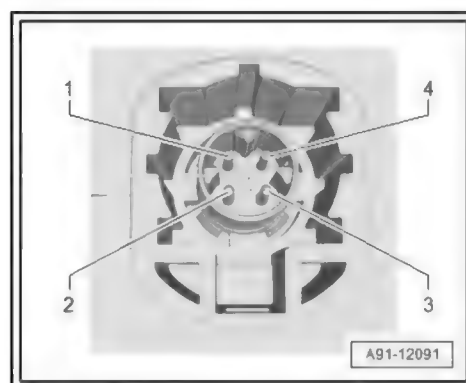
- 1 - Terminal 30
- 2 - Terminal 31
- 3 - USB, +5 V
- 4 - NF in, right-side (low frequency)
- 5 - Low frequency earth
- 6 - NF in, left-side (low frequency)



2 - 5-pin connector - T5bp-

All pins are connected to the control unit 1 for information electronics - J794- .

- 1 - USB 2 D (+)
- 2 - USB 1 D (-)
- 3 - USB 2 D (-)
- 4 - USB 1 D (+)
- 5 - Screen earth



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12.2.4 Pin assignment for connection 2 for external audio sources - R231-



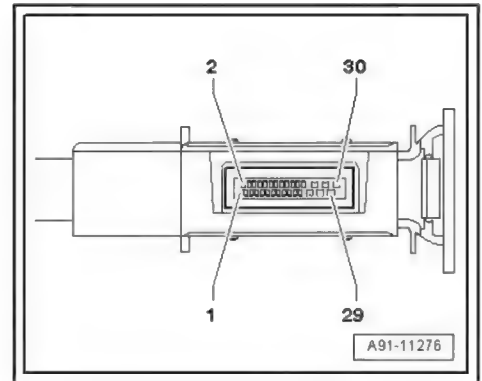
Note

Contacts which are not listed are not used.

30-pin connector - T30c-

All pins are connected to the control unit 2 for information electronics - J829- .

- 1 - NF in, left-side (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - Low frequency earth
- 4 - NF in, screen earth (low frequency)
- 9 - iPod, ACC power
- 13 - iPod data
- 14 - iPod data
- 16 - iPod detected
- 17 - D (+)
- 18 - D (-)
- 21 - Detect
- 22 - Earth
- 24 - FBAS wire (-)
- 25 - USB, earth
- 27 - FBAS wire (+)
- 28 - USB, +5 V



12.2.5 Pin assignment for connection for external audio sources - R199-; AML; Japan

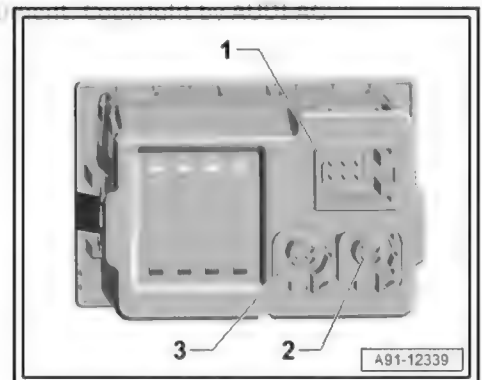


Note

Contacts which are not listed are not used.

Connection for external audio sources - R199-

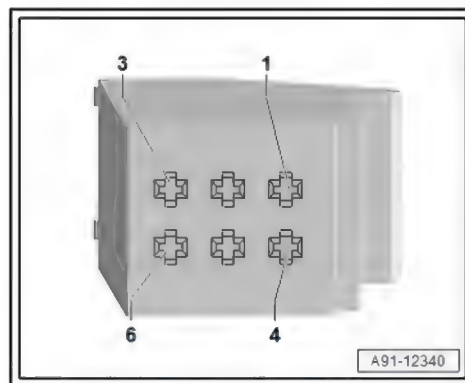
- 1 - 6-pin connector - T6cf-
- 2 - 5-pin connector - T5bp-
- 3 - 5-pin connector - T5bl-





1 - 6-pin connector - T6cf-

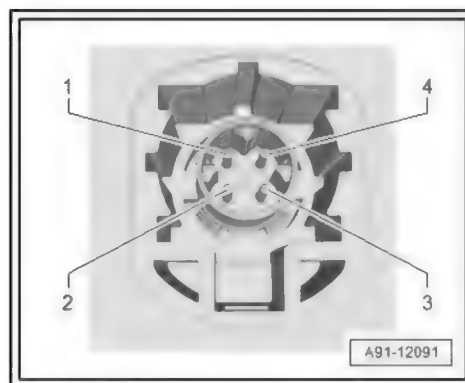
- 1 - Terminal 30
- 2 - Terminal 31
- 3 - USB, +5 V
- 4 - NF in, right-side (low frequency)
- 5 - Low frequency earth
- 6 - NF in, left-side (low frequency)



2 - 5-pin connector - T5bp-

All pins are connected to the control unit 1 for information electronics - J794- .

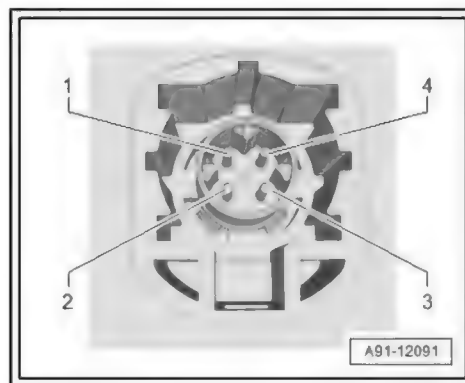
- 1 - USB 2 D (+)
- 2 - USB 1 D (-)
- 3 - USB 2 D (-)
- 4 - USB 1 D (+)
- 5 - Screen earth



3 - 5-pin connector - T5bl-

All pins are connected to the control unit 1 for information electronics - J794- .

- 1 - USB, earth
- 2 - USB D (-)
- 3 - USB ENABLE
- 4 - USB D (+)
- 5 - Screen earth



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12.3 Removing and installing connection for external audio sources - R199-

⇒ "12.3.1 Removing and installing connection for external audio sources R199, UF7", page 269

⇒ "12.3.2 Removing and installing connection for external audio sources R199, USB, AUX-IN, UE4/UI2", page 270

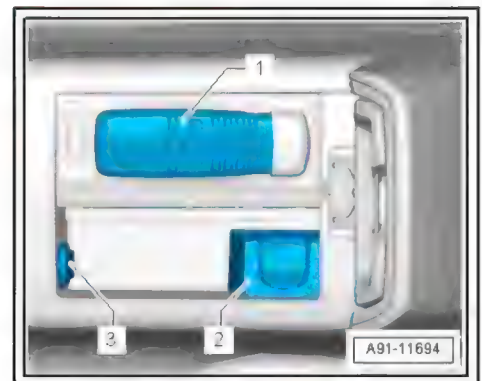
⇒ "12.3.3 Removing and installing connection 2 for external audio sources R321", page 270

12.3.1 Removing and installing connection for external audio sources - R199- , UF7

Connection for external audio sources - R199- -2- is located in centre console storage box.

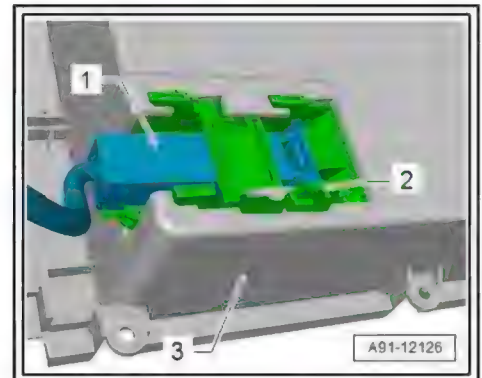
Removing

- Switch off ignition and all electrical equipment, and remove ignition key.



Connection for external audio sources - R199- -1- is clipped together with bracket -2- into rear of storage box in centre console -3-.

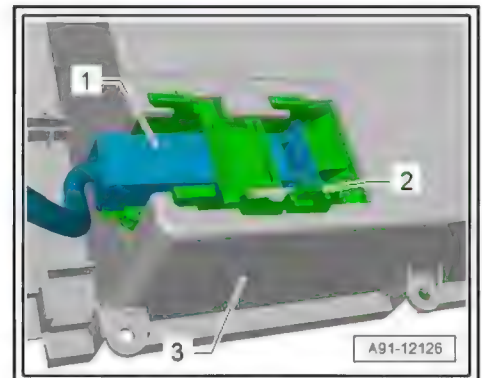
- Remove centre console storage box ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console storage box (front) .



- Unclip connection for external audio sources - R199- -1- together with bracket -2- from storage box -1-.
- Open bracket -2- on underside.
- Unclip connection for external audio sources - R199- -1- from bracket -2-.

Installing

- Install in reverse sequence of removal.



12.3.2 Removing and installing connection for external audio sources - R199- , USB, AUX-IN, UE4/UI2

Connection for external audio sources - R199- -1- is located in centre console storage box.

Removing

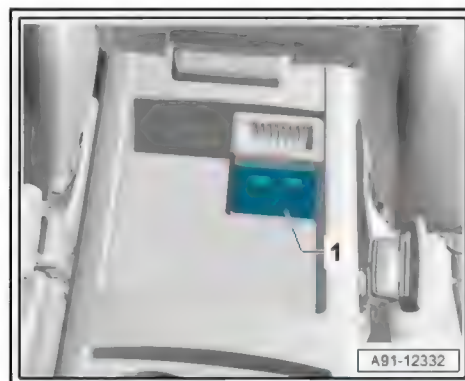
- Switch off ignition and all electrical equipment, and remove ignition key.

Connection for external audio sources - R199- is clipped into centre console storage box.

- Remove centre console storage box ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console storage box (front).
- Press tabs -arrows- on connection for external audio sources - R199- -1- and pull connection for external audio sources - R199- out of storage box.

Installing

- Install in reverse sequence of removal.



12.3.3 Removing and installing connection 2 for external audio sources - R321-

The connection 2 for external audio sources - R321- -1- is located in the rear centre armrest storage box.

The connection 2 for external audio sources - R321- is connected directly to the control unit 2 for information electronics - J829- .

The following external audio sources can be connected to connection 2 for external audio sources - R321- :

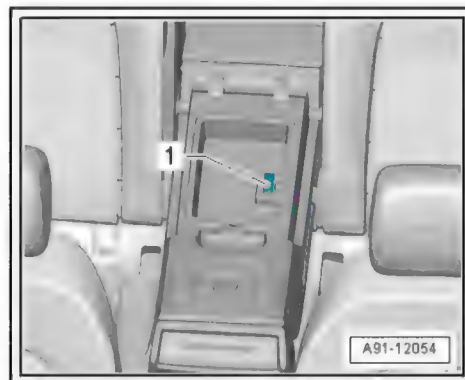
- ◆ iPod
- ◆ MP3 player
- ◆ USB stick

Appropriate adapter cables are required ⇒ Owner's Manual .

Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

- Switch off ignition and all electrical equipment, and remove ignition key.

Removing





Connection 2 for external audio sources - R321- -2- is clipped into rear of storage box in rear centre armrest -1-.

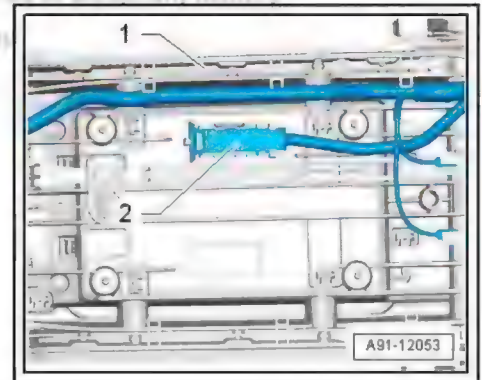
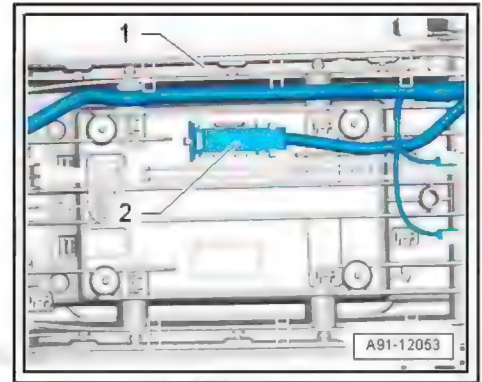
- Remove centre armrest (rear) ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing centre armrest .



- Detach connection 2 for external audio sources - R321- -2- from centre console -1-.

Installing

- Install in reverse sequence of removal.



13 Rear Seat Entertainment system (RSE)

⇒ "13.1 Overview - Rear Seat Entertainment system",
page 272

⇒ "13.2 Overview of fitting locations - Rear Seat Entertainment system", page 272

13.1 Overview - Rear Seat Entertainment system

The Rear Seat Entertainment system (9WP) consists of:

- ◆ Control unit 2 for information electronics - J829- , DVD player - R7- , SD card reader between rear seats in back panel
- ◆ Display units on backrests of front seats (multimedia system display unit 1 - Y22- , rear left/ multimedia system display unit 2 - Y23- , rear right)
- ◆ Multimedia system operating unit 2 - E499- in rear centre console
- ◆ Headphone connections in rear centre console
- ◆ Connection 2 for external audio sources - R231- in rear centre console

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .

13.2 Overview of fitting locations - Rear Seat Entertainment system



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1 - Multimedia system operating unit 2 - E499-

- ☐ Pin assignment
⇒ [page 35](#)
- ☐ Pin assignment, remote control ⇒ [page 36](#)
- ☐ Removing and installing
⇒ [page 22](#)

2 - Control unit 2 for information electronics - J829-

- ☐ Pin assignment
⇒ [page 31](#)
- ☐ Removing and installing
⇒ [page 20](#)

3 - Radio release tool - T10057-

4 - Connection 2 for external audio sources - R231-

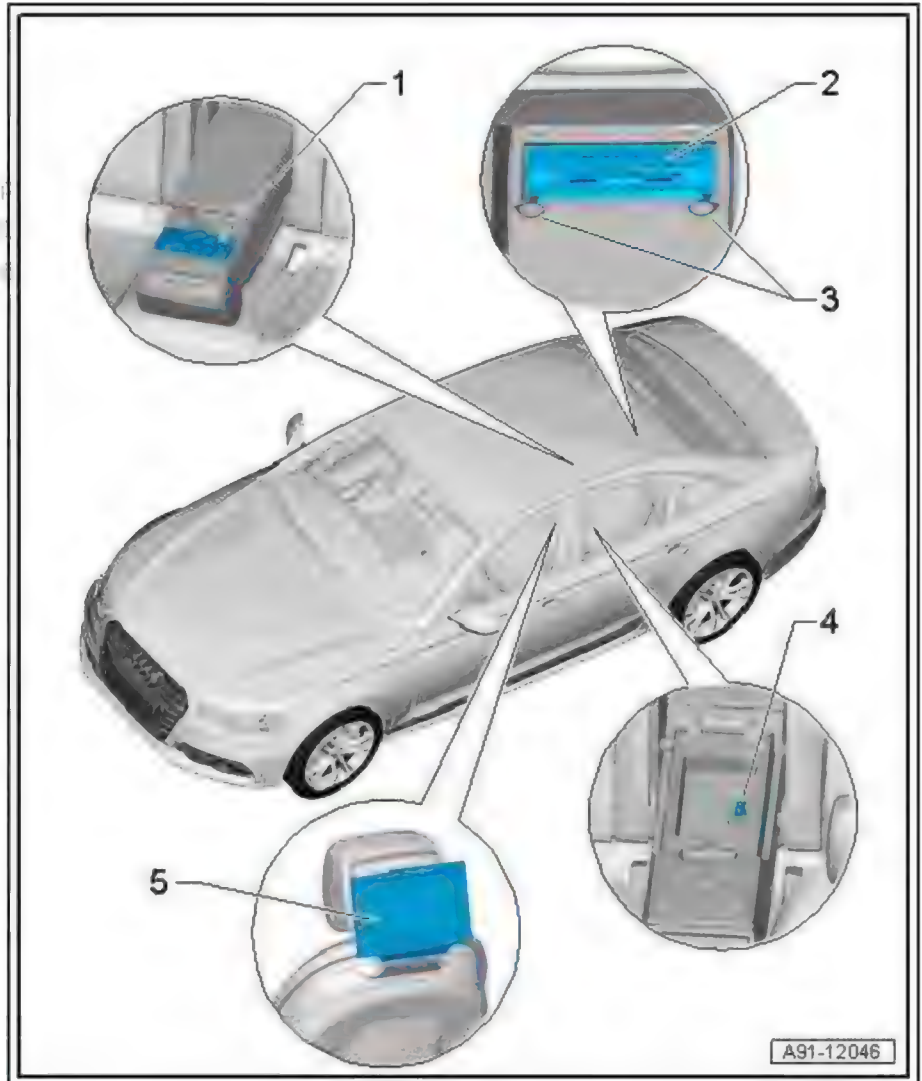
- ☐ Pin assignment
⇒ [page 267](#)
- ☐ Removing and installing
⇒ [page 270](#)

5 - Multimedia system display unit 1 - Y22- / multimedia system display unit 2 - Y23-

- ☐ Pin assignment
⇒ [page 26](#)
- ☐ Removing and installing
⇒ [page 16](#)

- Bolt for display

- ☐ 2x
- ☐ 4 Nm





14 Night vision system

⇒ ["14.1 Overview of fitting locations - night vision system", page 274](#)

⇒ ["14.2 Removing and installing camera for night vision system", page 277](#)

⇒ ["14.3 Removing and installing control unit for night vision system", page 279](#)

14.1 Overview of fitting locations - night vision system

⇒ ["14.1.1 Layout - night vision system", page 274](#)

⇒ ["14.1.2 Overview of fitting locations - night vision system", page 275](#)

⇒ ["14.1.3 Exploded view - camera for night vision system R212", page 277](#)

14.1.1 Layout - night vision system

The night vision system assists the driver when driving in the dark. The night vision screen in the instrument cluster displays a thermal image of the area in front of the vehicle. The range of approximately 300 m is far greater than that covered by the dipped beam or main beam headlights. Due to the detection of their body temperature, people and animals are visible on the screen in complete darkness. The system detects pedestrians at a distance of 13 m to 90 m in front of the vehicle and highlights them in yellow brackets. In addition, the system calculates a warning area using the current speed and yaw rate. If a pedestrian is within or moving towards the warning area, the system warns the driver of a possible collision with the pedestrian. The colour of the brackets highlighting the pedestrian will change to red, and you will hear an acoustic warning signal.

The night vision system consists of the camera for night vision system - R212- and the control unit for night vision system - J853-. The button for night vision system - E680- is integrated in the light switch - E1-. The camera for night vision system - R212- is located on the radiator grille in the outer Audi ring on the left side of the vehicle. The control unit for night vision system - J853- is located in the front footwell on the left side of the vehicle. The camera for night vision system - R212- is a subsystem of the control unit for night vision system - J853- and can be checked via the control unit for night vision system - J853- (diagnostic capability). In the event of a fault, the camera for night vision system - R212- and control unit for night vision system - J853- can be renewed individually. A repair kit containing a protective window, seal, quick-release fastener, two cotton buds for cleaning the sealing area and instructions is available for the camera for night vision system - R212- (for cases where the protective window is damaged or scratched due to chippings or sand particles etc.).

However, if the protective window is no longer watertight due to the damage, the camera for night vision system - R212- must be renewed completely ⇒ [page 277](#).





The protective window of the camera for night vision system - R212- is cleaned by a washer jet. The washer jet is connected to the headlight washer system.

The camera for night vision system - R212- must be calibrated for the night vision system to function correctly.

Recalibration is necessary if:

- ◆ The entry "no or incorrect basic setting/adaption" is actively stored in the event memory
- ◆ The camera for night vision system - R212- has been removed or renewed
- ◆ The bumper or radiator grille has been removed or renewed
- ◆ Adjustments have been made to the rear axle
- ◆ Modifications have been made to the running gear

Recalibration is not required following modifications affecting the control unit for night vision system - J853- (renewal, software update).



Note

Before the night vision system is calibrated, the event memory must be interrogated and any faults must be eliminated. Calibration may only be performed using a wheel alignment unit approved by VW/Audi. Only the setting device - VAS 6430- and setting device, basic set - VAS 6430/1- with the enhanced night vision calibration unit - VAS 6430/6- may be used to calibrate the night vision system.

14.1.2 Overview of fitting locations - night vision system

1 - Light switch - E1- with button for night vision system - E680-

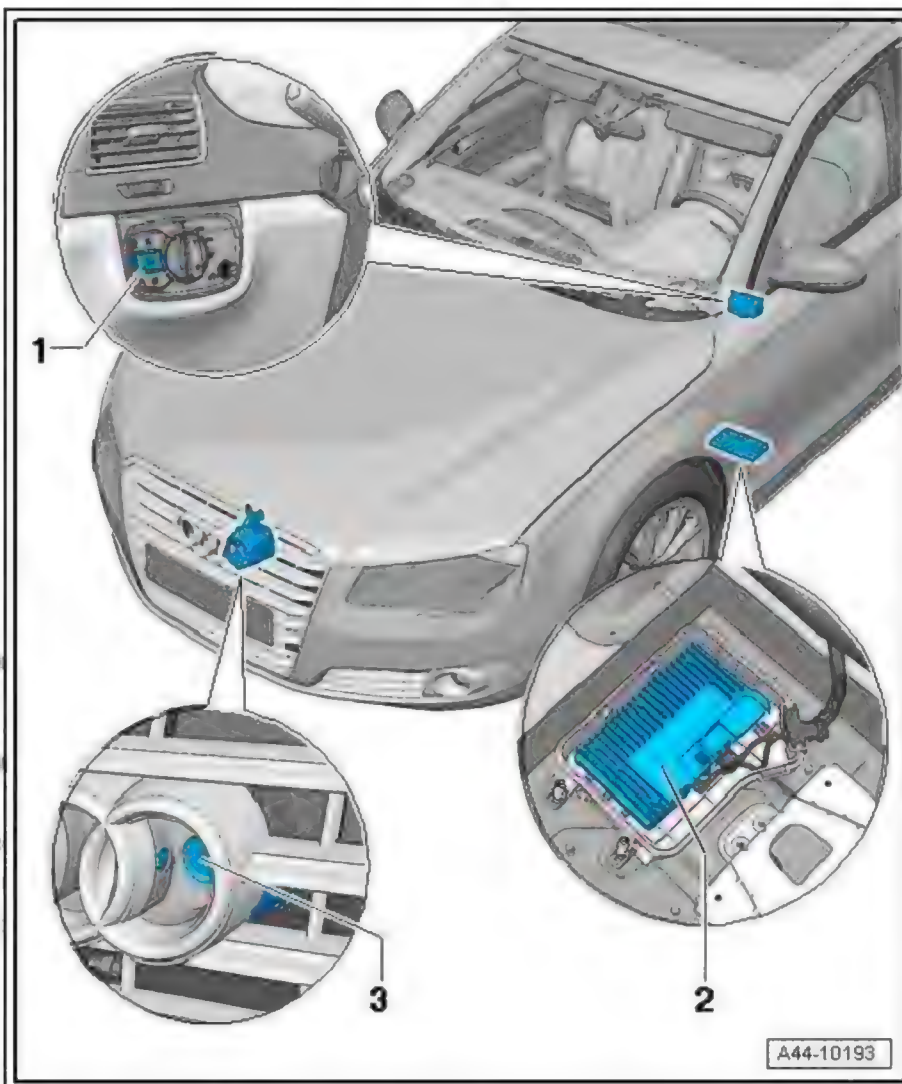
- ❑ Removing and installing
⇒ Electrical system;
Rep. gr. 96 ; Controls;
Overview of fitting locations - controls in dash panel .

2 - Control unit for night vision system - J853-

- ❑ Fitting location: in front left footwell
- ❑ Removing and installing
⇒ [page 279](#)

3 - Camera for night vision system - R212-

- ❑ Removing and installing
⇒ [page 277](#)
- ❑ Calibration ⇒ Running gear, front-wheel drive and four-wheel drive;
Rep. gr. 44 ; Night vision system; Calibrating night vision system





14.1.3 Exploded view - camera for night vision system - R212-

1 - Trim

2 - Lid

- ☐ With quick-release fastener

3 - Protective window

- ☐ Removing and installing
⇒ [page 279](#)



Note

If protective window is no longer watertight due to damage, camera for night vision system - R212- must be renewed completely.

4 - Seal

- ☐ Always renew after removing

5 - Camera for night vision system - R212-

6 - Bolt

- ☐ 4x
- ☐ 6 Nm

7 - Bolt

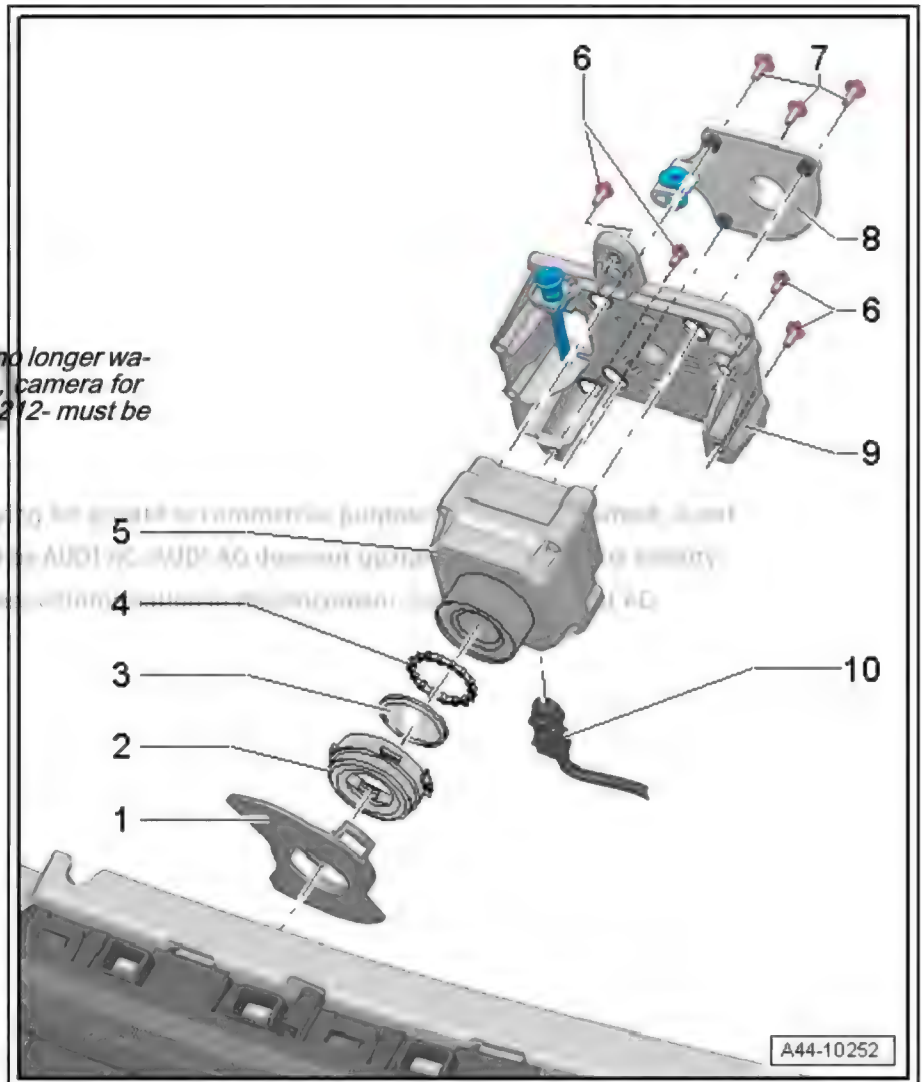
- ☐ 3x
- ☐ 5 Nm

8 - Retaining plate

9 - Retaining plate

- ☐ With adjuster screw and mounting for washer jet

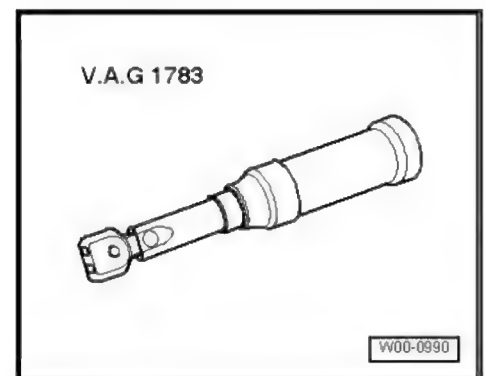
10 - Electrical connector



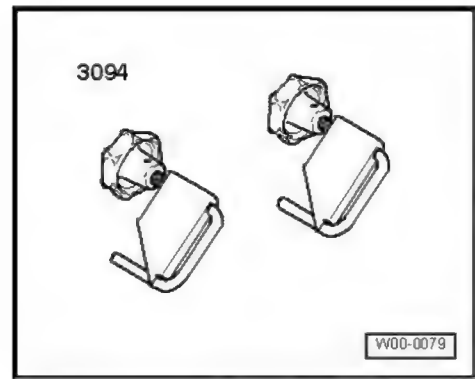
14.2 Removing and installing camera for night vision system

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1783-



◆ Hose clamps up to 25 mm - 3094-



Removing

- Switch off ignition and all electrical equipment, and remove ignition key.

RS 6 vehicles:

- Remove front bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front); Removing and installing bumper cover .

All vehicles except RS 6:

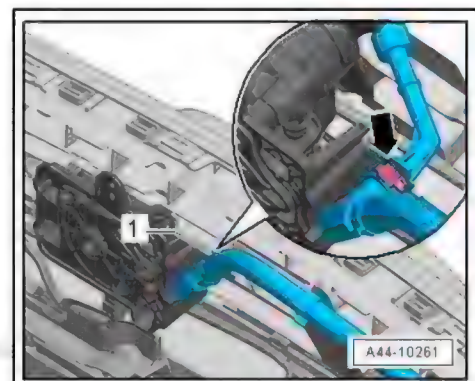
- Remove lock carrier cover (front) ⇒ General body repairs, exterior; Rep. gr. 50 ; Lock carrier; Exploded view - lock carrier .

All vehicles:

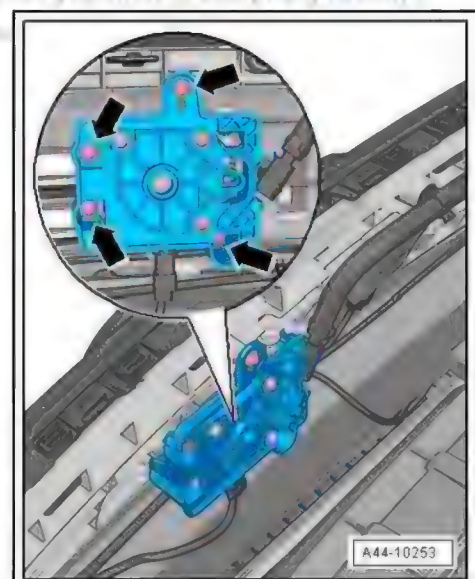
- Release retaining clip -arrow- and pull off washer fluid hose -1-.
- If necessary, clamp off washer fluid hose at an appropriate point using hose clamps up to 25 mm - 3094- .



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- Remove bolts -arrows-.
- Detach camera for night vision system - R212- together with retaining plate from bumper cover and guide it out upwards. Make sure washer jet is not damaged.
- Unplug connector on camera for night vision system - R212- .



- Unscrew bolts -arrows- and detach camera for night vision system - R212- from retaining plate.

Removing protective window

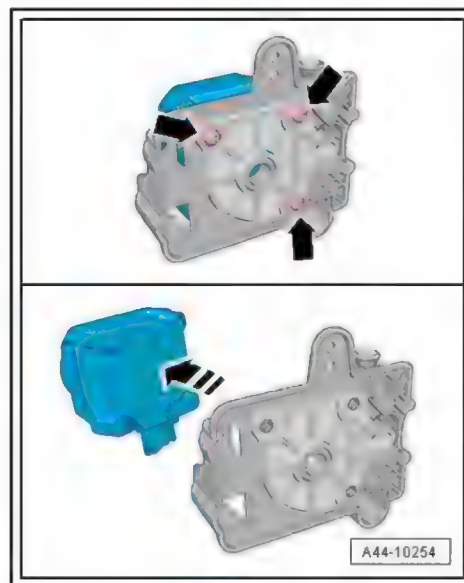
- Camera for night vision system - R212- removed



Note

If the protective window is no longer watertight due to damage, the camera for night vision system - R212- must be renewed completely ⇒ [page 277](#) .

- Detach trim ⇒ [Item 1 \(page 277\)](#) .



- Push together retaining lugs -arrow- and turn cover approx. 90° anti-clockwise.
- Remove cover, protective window and seal from camera for night vision system - R212- .



Note

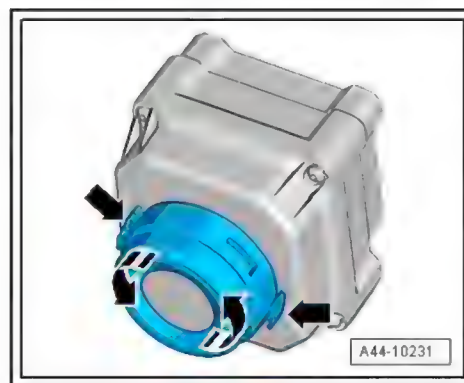
Always renew seal if it has been removed.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ♦ ⇒ ["14.1.3 Exploded view - camera for night vision system R212" , page 277](#)
- Calibrate camera for night vision system ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 44 ; Night vision system; Calibrating night vision system .



14.3 Removing and installing control unit for night vision system

The control unit for night vision system - J853- is located in the front left footwell.



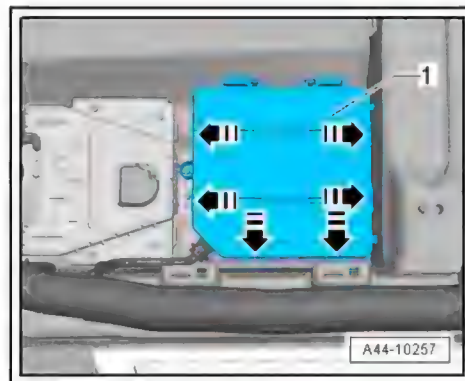
Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ⇒ Vehicle diagnostic tester.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Unbolt front seat (left-side) and move back with wiring connected ⇒ [General body repairs, interior; Rep. gr. 72 ; Front seats; Exploded view - front seat](#) .

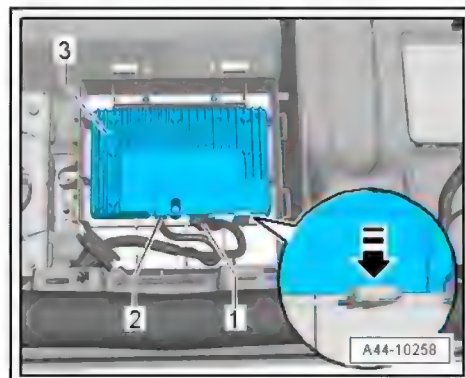
- Remove floor mat.
- Remove sill panel trim ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Exploded view - sill panel trim .
- Remove foot rest ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Exploded view - foot rest and floor covering .
- Unhook floor covering and press to one side.
- Release clips in direction of -arrows-.
- Open cover -1-.



- Press retaining lug in direction of -arrow- and take control unit for night vision system - J853- -3- out of electronics box.
- Release and unplug connectors -1- and -2- from control unit for night vision system - J853- -3-.
- First release connector -2-, then connector -1-

Installing

- Install in reverse sequence of removal.



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15 Overhead view camera

⇒ ["15.1 Layout - overhead view camera system", page 281](#)

⇒ ["15.2 Overview of fitting locations - overhead view camera", page 283](#)

⇒ ["15.3 Removing and installing control unit for overhead view camera J928 ", page 283](#)

⇒ ["15.4 Removing and installing rear overhead view camera R246 ", page 284](#)

⇒ ["15.5 Removing and installing front overhead view camera R243 ", page 287](#)

⇒ ["15.6 Calibrating overhead view camera system", page 288](#)

15.1 Layout - overhead view camera system

The overhead view camera system (KA6) consists of four cameras. They are located in the radiator grille, in both exterior mirrors and in the rear lid. The system helps the driver when parking, manoeuvring or when driving in tight spaces (such as driveways). Camera images are displayed on display unit for front information display and operating unit control unit - J685- (display).

Camera views available to be selected:

- ◆ Bird's eye view: The images from all four cameras (front overhead view camera - R243- / left overhead view camera - R244- / right overhead view camera - R245- / rear overhead view camera - R246-) give a panorama view of the whole vehicle.
- ◆ Front camera: The image from the camera in the front bumper cover (front overhead view camera - R243-) shows the area in front of the vehicle (up to the left and right edges of the bumper).
- ◆ Side cameras: The images from the cameras in the left and right exterior mirrors (left overhead view camera - R244- / right overhead view camera - R245-) show the area close to the sides of the vehicle.
- ◆ Rear camera: The image from the reversing camera in the rear lid (rear overhead view camera - R246-) shows the area behind the vehicle.

Components of overhead view camera system:

- ◆ Front overhead view camera - R243-
- ◆ Left overhead view camera - R244-
- ◆ Right overhead view camera - R245-
- ◆ Rear overhead view camera - R246-
- ◆ Control unit for overhead view camera - J928-
- ◆ Control unit 1 for information electronics - J794-

As an option, other control units may also be installed.

Do not fit an additional number plate on vehicles equipped with overhead view camera system as this will impair the function of the system.

Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Control unit 1 for information electronics - J794- in dash panel

3 - Multimedia system operating unit - E380- in centre console

4 - MOST bus

5 - Right overhead view camera - R245- in exterior mirror (right-side)

6 - Data bus diagnostic interface - J533- beneath rear seat bench

7 - CAN bus, dash panel insert

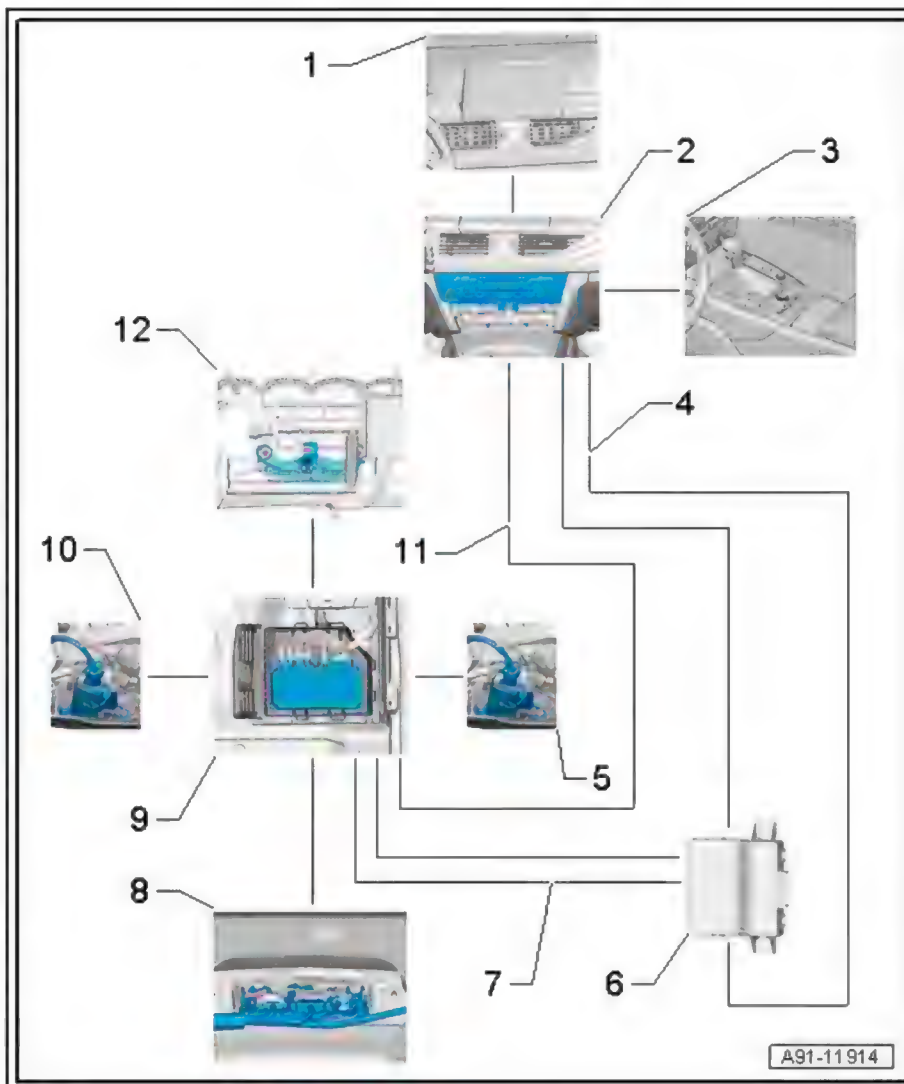
8 - Rear overhead view camera - R246- in rear lid

9 - Control unit for overhead view camera - J928- beneath front seat (right-side)

10 - Left overhead view camera - R244- in exterior mirror (left-side)

11 - FBAS wire from control unit for overhead view camera - J928-

12 - Front overhead view camera - R243- in front bumper cover (centre)



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15.2 Overview of fitting locations - overhead view camera

1 - Bolt

- ☐ 2x
- ☐ 2 Nm

2 - Right overhead view camera - R245- , left overhead view camera - R244-

- ☐ Removing and installing
⇒ General body repairs, exterior; Rep. gr. 66 ; Exterior mirrors; Exploded view - exterior mirror
- ☐ Calibration ⇒ [page 288](#)

3 - Electronics box

4 - Control unit for overhead view camera - J928-

- ☐ Pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ☐ Removing and installing
⇒ [page 283](#)
- ☐ Calibration ⇒ [page 288](#)

5 - Rear overhead view camera - R246-

- ☐ Removing and installing, Saloon
⇒ [page 288](#)
- ☐ Removing and installing, Avant ⇒ [page 286](#)
- ☐ Calibration ⇒ [page 288](#)

6 - Nut

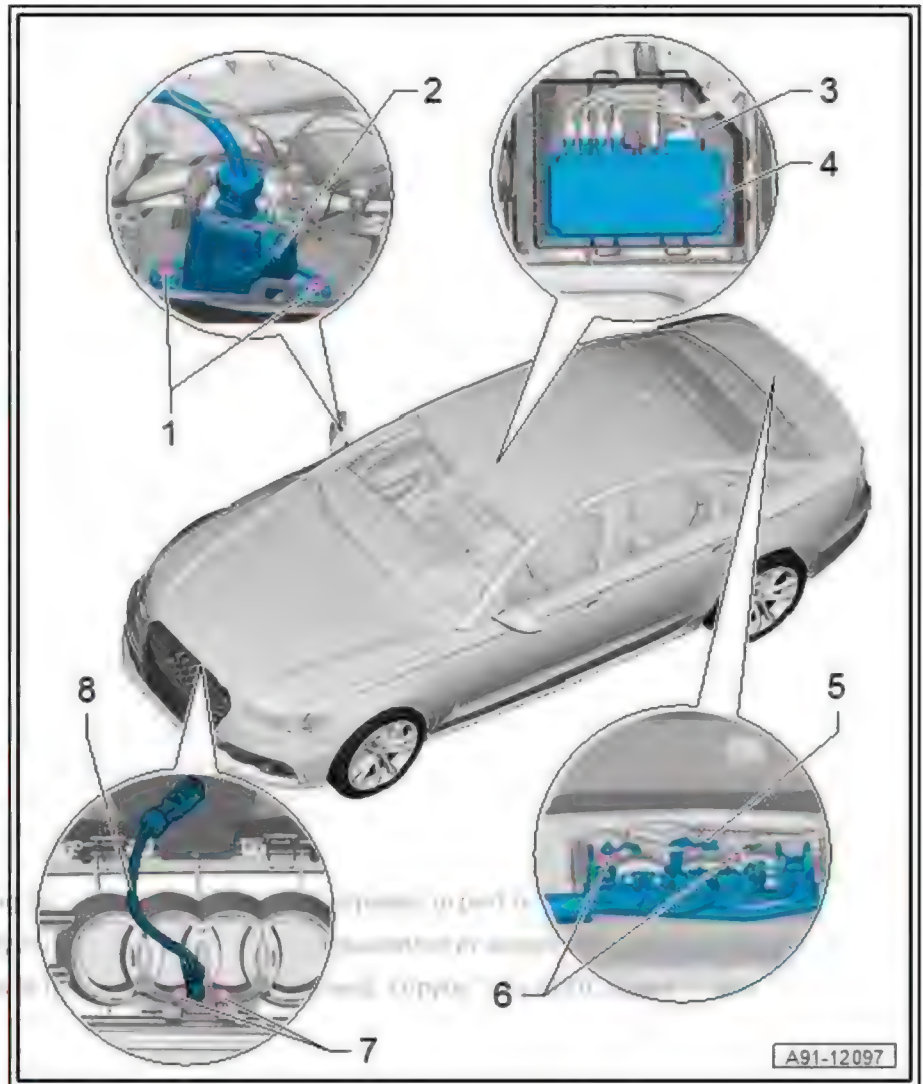
- ☐ 2x
- ☐ 3 Nm

7 - Bolt

- ☐ 2x
- ☐ 3 Nm

8 - Front overhead view camera - R243-

- ☐ Removing and installing ⇒ [page 288](#)
- ☐ Calibration ⇒ [page 288](#)



Not illustrated

- ◆ Bolts for closure plate of bumper cover: 3 Nm

15.3 Removing and installing control unit for overhead view camera - J928-

The control unit for overhead view camera - J928- is located beneath the front seat (right-side).

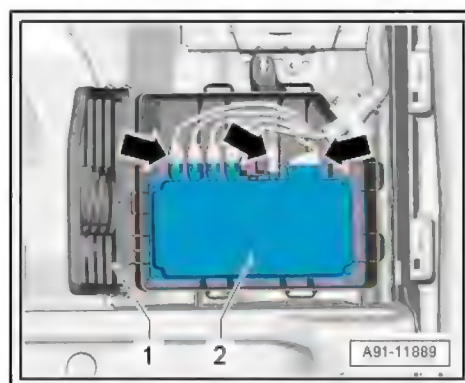


Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ⇒ Vehicle diagnostic tester.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Fold floor covering to side ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing floor covering .
- Open cover -1- of electronics box.
- Release and unplug connectors -arrows- on control unit for overhead view camera - J928- -2-.

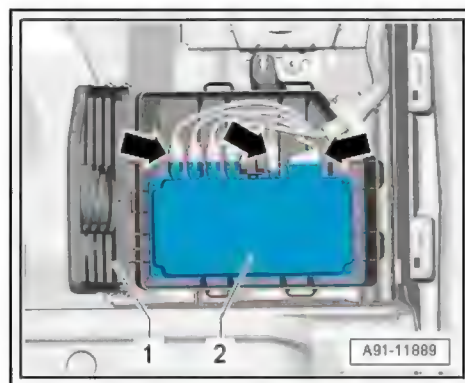


The control unit for overhead view camera - J928- -2- is only clipped into the electronics box.

- Press catch to side and take control unit for overhead view camera - J928- -2- out of electronics box.

Installing

- Installation is carried out in reverse sequence; note the following:
- Perform calibration ⇒ [page 288](#) .



15.4 Removing and installing rear overhead view camera - R246-

⇒ ["15.4.1 Removing and installing rear overhead view camera R246 - Saloon", page 284](#)

⇒ ["15.4.2 Removing and installing rear overhead view camera R246 - Avant", page 286](#)

15.4.1 Removing and installing rear overhead view camera - R246- - Saloon

Special tools and workshop equipment required



◆ Torque screwdriver - V.A.G 1624-



Rear overhead view camera - R246- is installed inside handle of rear lid and is permanently fitted in handle.

When renewing the rear overhead view camera - R246- the handle must also be renewed.

- Switch off ignition and all electrical equipment, and remove ignition key.

Removing

The rear overhead view camera - R246- is equipped with a trailing cable. The connectors to the vehicle wiring harness are located in the rear lid.

- Remove rear lid trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing rear lid trim (bottom) .
- Release and unplug connectors -1-, -2- and -3- in rear lid.

Rear overhead view camera - R246- is permanently fitted in handle.

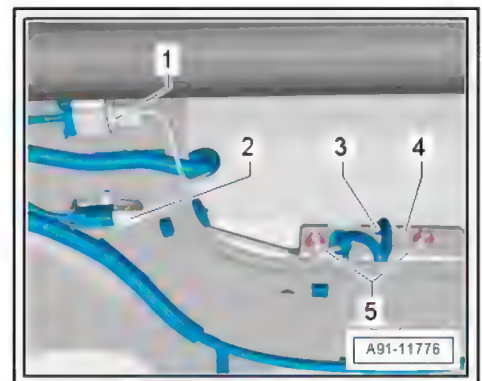
- Remove nuts -5-.



Note

Depending on the country version, it may be necessary to remove the number plate or number plate holder.

- Pull handle -4- together with rear overhead view camera - R246- out of mounting in rear lid.



Installing

- Installation is carried out in reverse sequence; note the following:
- Close rear lid.

If the rear overhead view camera - R246- has been renewed, it must be re-adapted before it is calibrated.

Use ⇒ Vehicle diagnostic tester to do so.

- Perform calibration ⇒ [page 288](#) .

Tightening torques

- ◆ ⇒ ["15.2 Overview of fitting locations - overhead view camera", page 283](#)

15.4.2 Removing and installing rear overhead view camera - R246- - Avant

Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-



Rear overhead view camera - R246- is installed inside handle of rear lid and is permanently fitted in handle.

When renewing the rear overhead view camera - R246- the handle must also be renewed.

- Switch off ignition and all electrical equipment, and remove ignition key.

Removing

The rear overhead view camera - R246- is equipped with a trailing cable. The connectors to the vehicle wiring harness are located in the rear lid.

- Remove rear lid trim (bottom) ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing rear lid trim (bottom) .

- Release and unplug connectors -1-, -2- and -4- in rear lid.

Rear overhead view camera - R246- is permanently fitted in handle -3-.

- Remove nuts -arrows-.



Note

Depending on the country version, it may be necessary to remove the number plate or number plate holder.

- Pull handle -3- together with rear overhead view camera - R246- out of mounting in rear lid.

Installing

- Installation is carried out in reverse sequence; note the following:
- Close rear lid.

If the rear overhead view camera - R246- has been renewed, it must be re-adapted before it is calibrated.

Use ⇒ Vehicle diagnostic tester to do so.

- Perform calibration ⇒ [page 288](#) .

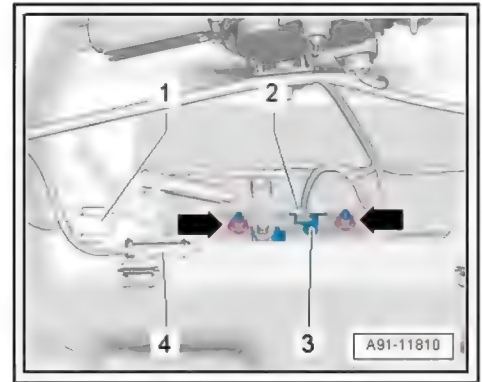
Tightening torques

- ♦ ⇒ ["15.2 Overview of fitting locations - overhead view camera", page 283](#)

15.5 Removing and installing front overhead view camera - R243-

Special tools and workshop equipment required

- ♦ Torque screwdriver - V.A.G 1624-



Front overhead view camera - R243- is fitted in bumper cover between Audi rings (between camera for night vision system - R212- and garage door operation control unit - J530-).

- Switch off ignition and all electrical equipment, and remove ignition key.

Removing

- Remove radiator grille from bumper cover ⇒ General body repairs, exterior; Rep. gr. 66 ; Radiator grille/front trim panel; Removing and installing radiator grille .

- Remove bolts -2- on front overhead view camera - R243- -3-.
- Detach front overhead view camera - R243- -3- from bumper cover.
- Release and unplug wiring -1- from front overhead view camera - R243- -3-.

Installing

- Installation is carried out in reverse sequence; note the following:

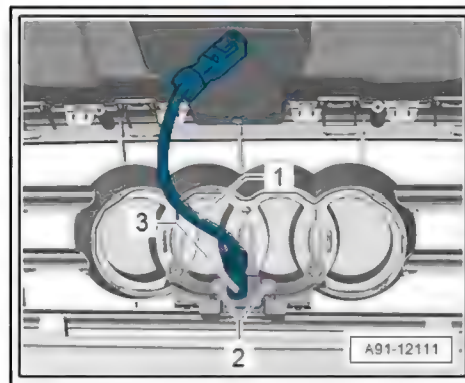
If the front overhead view camera - R243- has been renewed, it must be re-adapted before it is calibrated.

Use ⇒ Vehicle diagnostic tester to do so.

- Perform calibration ⇒ [page 287](#) .

Tightening torques

- ♦ ⇒ ["15.2 Overview of fitting locations - overhead view camera", page 283](#)



15.6 Calibrating overhead view camera system

⇒ ["15.6.1 Setting up and aligning calibration unit VAS 6350 with calibration unit for overhead view camera VAS 6350/6 ", page 288](#)

⇒ ["15.6.2 Calibrating front overhead view camera R243 ", page 292](#)

⇒ ["15.6.3 Calibrating left overhead view camera R244 / right overhead view camera R245 ", page 296](#)

⇒ ["15.6.4 Calibrating rear overhead view camera R246 ", page 300](#)

15.6.1 Setting up and aligning calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6-

After performing service work on the vehicle it might be necessary to re-calibrate the overhead view camera system. This is required after:

- ♦ Renewal of one or more cameras (only the affected camera must be re-calibrated)
- ♦ Renewal of control unit for overhead view camera - J928- (all cameras must be re-calibrated)
- ♦ Repair work has been performed on components in which a camera is installed or which affect the camera installation position (only the affected camera must be calibrated).
- ♦ Wheel alignment
- ♦ Misalignment in overlapping areas of individual camera images

If control unit for overhead view camera - J928- is renewed, all cameras must be re-calibrated.

Requirements for calibration

- ♦ Camera lenses must be clean. Clean camera lenses.
- ♦ Check camera images on display unit for front information display and operating unit control unit - J685- . If the image is



affected by a damaged camera, renew this camera. If the image is not straight, check that this camera is properly secured.

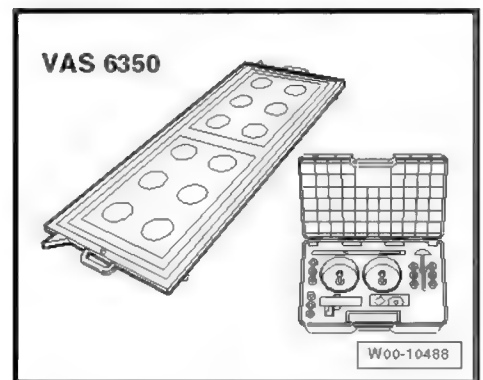
- ◆ Both exterior mirrors must be folded out.
- ◆ Vehicle must be positioned on a firm and even surface.
- ◆ There must be sufficient space around the vehicle (at least 2 m).
- ◆ On vehicles with air suspension, "auto" mode must be active and the running gear must have been set to normal air spring level using ⇒ Vehicle diagnostic tester.
- ◆ Parking brake must be activated.
- ◆ Steering wheel must be in centre position, wheels must be straight.
- ◆ All doors and the rear lid must be closed.
- ◆ There must not be anyone inside the vehicle.
- ◆ Vehicle must not be loaded (unladen weight).
- ◆ The battery charger must be connected.
- ◆ The ignition must be switched on.
- ◆ The system must be active and must be being displayed on the display unit for front information display and operating unit control unit - J685- .
- ◆ Do not move vehicle during the calibration process.

If all cameras require calibration, they should be calibrated in the following order:

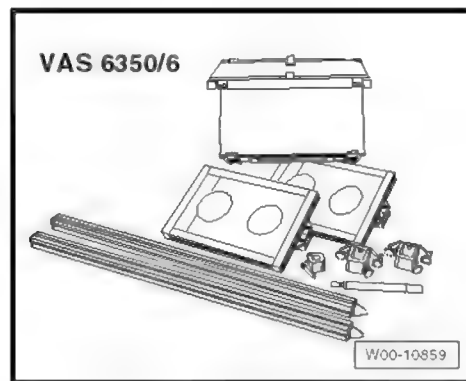
- ◆ Front overhead view camera - R243-
- ◆ Rear overhead view camera - R246-
- ◆ Left overhead view camera - R244-
- ◆ Right overhead view camera - R245-

Special tools and workshop equipment required

- ◆ Calibration unit - VAS 6350-



◆ Calibration unit for overhead view camera - VAS 6350/6-



◆ Supplementary kit for Audi R8 - VAS 6350/5- for rims with large offset, e.g. Audi RS 6

◆ ⇒ Vehicle diagnostic tester

The calibration unit - VAS 6350- consists of the following items:

- ◆ Calibration field
- ◆ Wheel centre mounting - VAS 6350/1-
- ◆ Spacing laser - VAS 6350/2-
- ◆ Linear laser - VAS 6350/3-

The calibration unit for overhead view camera - VAS 6350/6- consists of the following items:

- ◆ Support post with board (left-side) - VAS 6350/6-1-
- ◆ Support post with board (right-side) - VAS 6350/6-2-
- ◆ Post mounting (left-side) - VAS 6350/6-3-
- ◆ Post mounting (right-side) - VAS 6350/6-4-
- ◆ Guide pin - VAS 6350/6-5-
- ◆ Mounting for linear laser - VAS 6350/6-6-

Setting up calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6-

Support post with board (left-side) - VAS 6350/6-1- and support post with board (right-side) - VAS 6350/6-2- must stand perpendicular to the ground.

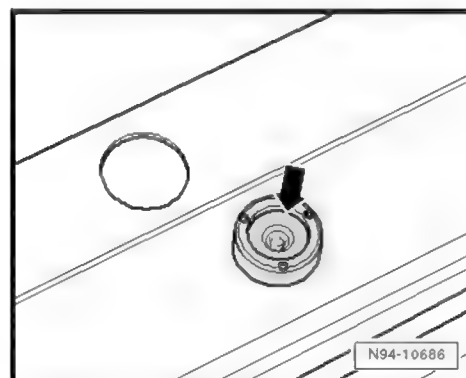
- Move calibration field of calibration unit - VAS 6350- to a horizontal position.
- To do so, turn plastic feet beneath calibration field of calibration unit - VAS 6350- to make air bubble in spirit level move exactly to centre of display -arrow-.



WARNING

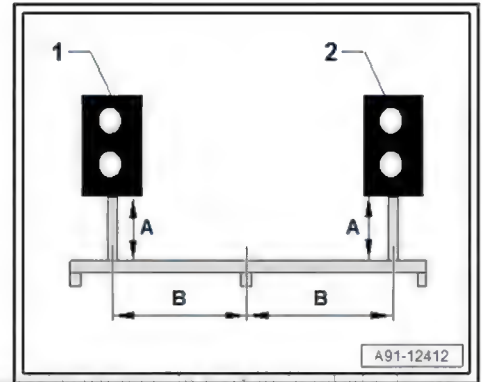
Make sure no light is reflected on calibration unit for overhead view camera - VAS 6350/6- .

Reflected light impairs the view of the cameras and therefore it may be impossible to perform calibration.





- Align the support post with board (left-side) - VAS 6350/6-1- -1- and the support post with board (right-side) - VAS 6350/6-2- -2- with the scale of the calibration unit - VAS 6350- to -B- (77.5) on both sides.
- Align the height of the support post with board (left-side) - VAS 6350/6-1- -1- and the support post with board (right-side) - VAS 6350/6-2- -2- so that dimension -A- between the bottom edge of the black measurement field (NOT the aluminium frame) and the top surface of the calibration field of the calibration unit - VAS 6350- is 150 mm.



The brackets on the outside of the calibration field of the calibration unit - VAS 6350- must always be flush with the outer edge of the black line on the measurement field when distances are being measured.

Set up positions of calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6-

1 - Setup for calibration of front overhead view camera - R243-

2 - Front overhead view camera - R243-

□ Calibrating ⇒ [page 300](#)

3 - Right overhead view camera - R245-

□ Calibrating ⇒ [page 296](#)

4 - Setup for calibration of right overhead view camera - R245-

5 - Rear overhead view camera - R246-

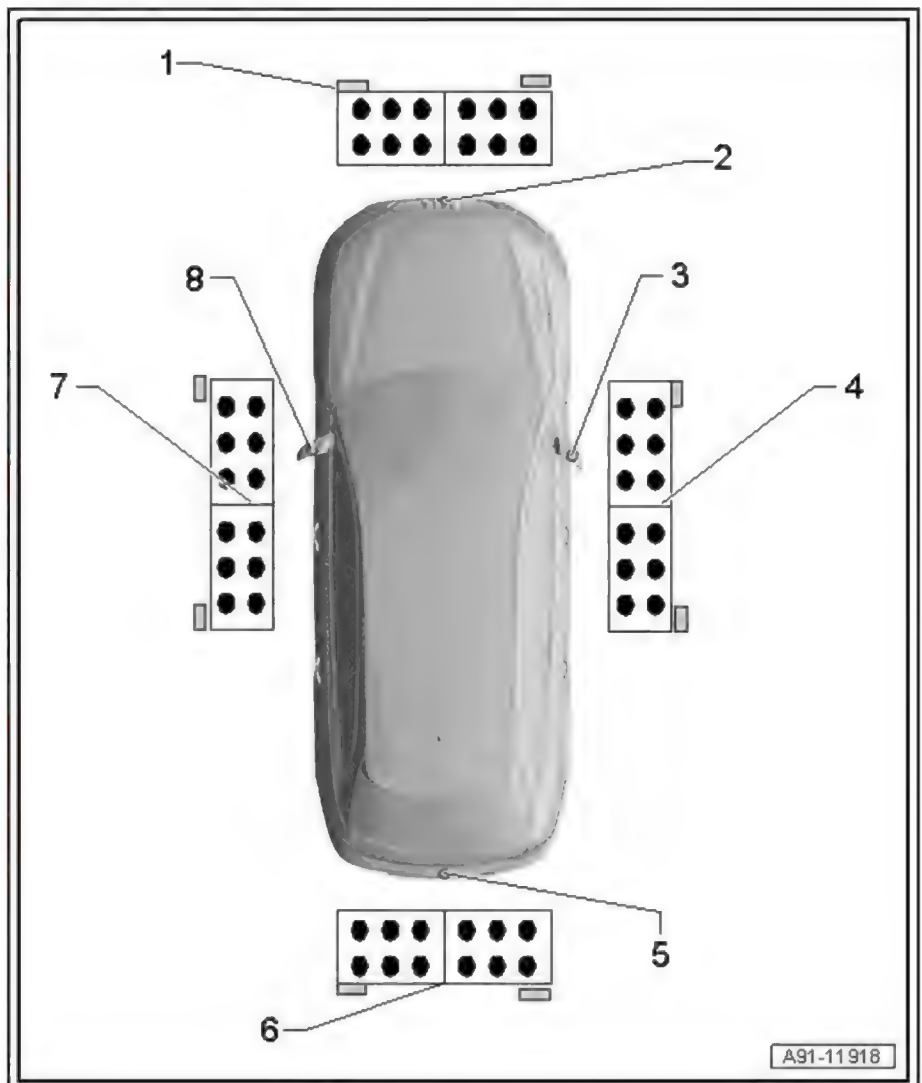
□ Calibrating ⇒ [page 300](#)

6 - Setup for calibration of rear overhead view camera - R246-

7 - Setup for calibration of left overhead view camera - R244-

8 - Left overhead view camera - R244-

□ Calibrating ⇒ [page 296](#)





WARNING

Make sure no light is reflected on calibration unit for overhead view camera - VAS 6350/6- .

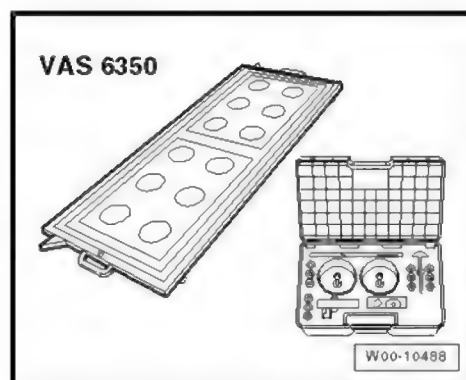
Reflected light impairs the view of the cameras and therefore it may be impossible to perform calibration.

15.6.2 Calibrating front overhead view camera - R243-

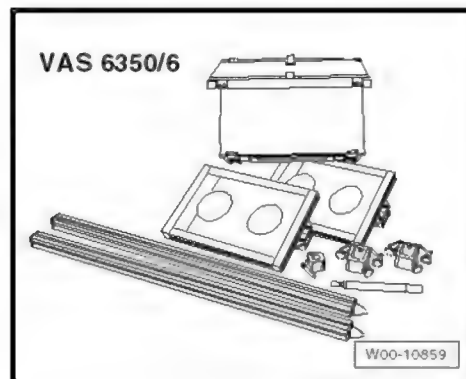
Front overhead view camera - R243- is fitted in bumper cover between Audi rings (between camera for night vision system - R212- and garage door operation control unit - J530-).

Special tools and workshop equipment required

- ◆ Calibration unit - VAS 6350-



- ◆ Calibration unit for overhead view camera - VAS 6350/6-



- ◆ Supplementary kit for Audi R8 - VAS 6350/5- for rims with large offset (Audi RS 6)
- ◆ ⇒ Vehicle diagnostic tester
- Ensure requirements are met ⇒ [page 288](#) .
- Set up and align calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- ⇒ [page 288](#) .
- Connect ⇒ Vehicle diagnostic tester.

Setting up calibration unit

Fit wheel centre mounting - VAS 6350/1- :

- Check bolt circle of wheels.
- Prepare wheel centre mountings - VAS 6350/1- as required. Use spacers.



- Use supplementary kit for Audi R8 - VAS 6350/5- for rims with large offset, e.g. for Audi RS 6.
- To do so, secure three wheel bolt adapters to each wheel centre mounting - VAS 6350/1- to match the hole circle.
- Position paddles on both wheel centre mountings - VAS 6350/1- and secure each paddle with clamping bolt.
- Fit wheel centre mountings - VAS 6350/1- onto wheel bolts on rear wheels.

The wheel centre mountings - VAS 6350/1- are kept in position by the O-rings in the adapters.



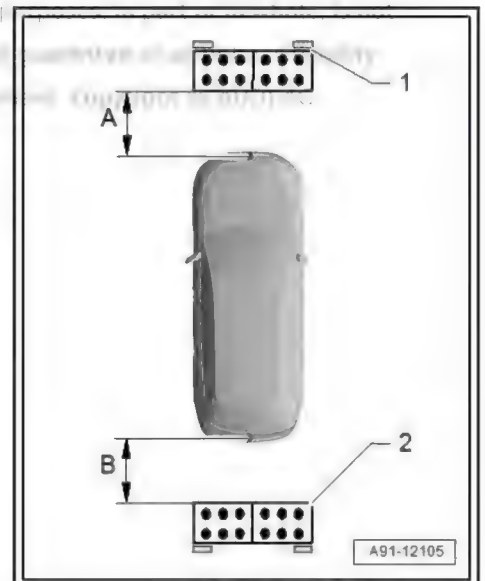
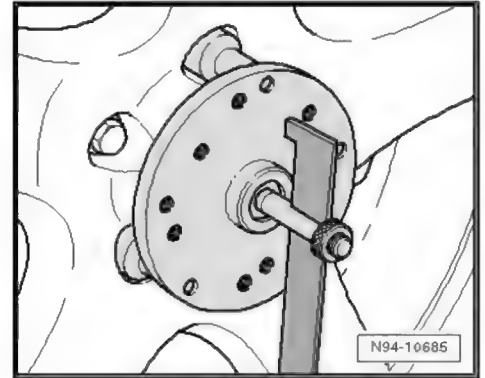
Note

When fitting the wheel centre mountings - VAS 6350/1- onto the wheels, make sure that they are not mounted on any "anti-theft" wheel bolts that might be installed.

- Use clamping bolts to adjust paddles so that they are free to move just slightly above the ground. Make sure the paddles can move freely.

Alignment of calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- :

- After setting up calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- 1-, position it centrally between 400 mm and 600 mm -dimension A- in front of the vehicle (in front of bumper cover).
- Move calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- to a horizontal position.



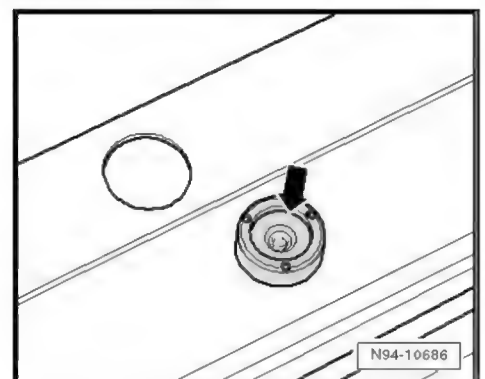
- To do so, turn plastic feet beneath calibration field of calibration unit - VAS 6350- to make air bubble in spirit level move exactly to centre of display -arrow-.



WARNING

Make sure no light is reflected on calibration unit for overhead view camera - VAS 6350/6- .

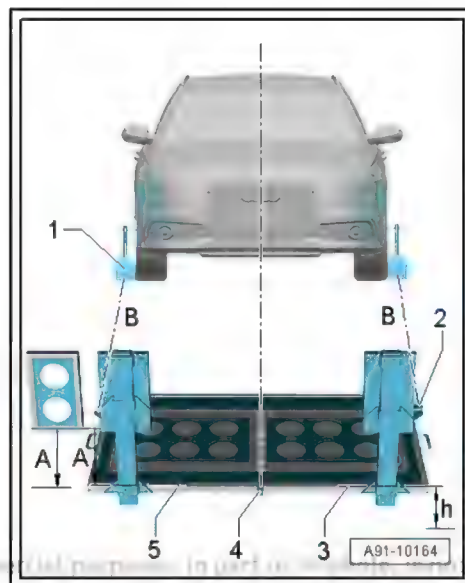
Reflected light impairs the view of the cameras and therefore it may be impossible to perform calibration.



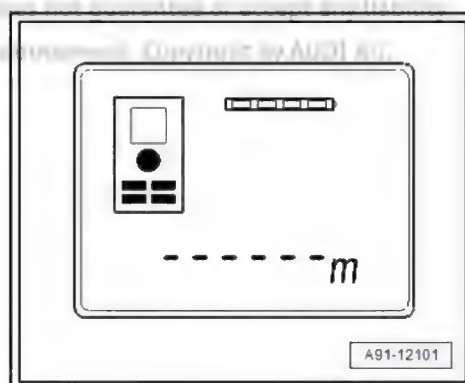
- Secure linear laser - VAS 6350/3- -4- centrally at the location provided on the calibration unit for overhead view camera - VAS 6350/6- .
- Switch on linear laser - VAS 6350/3- -4- and align calibration field of calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- so that laser beam shines onto centre of Audi rings on front of vehicle.
- Check whether Audi rings are in the centre on front of vehicle; readjust laser beam accordingly.

Measuring gap:

- Switch on spacing laser - VAS 6350/2- .

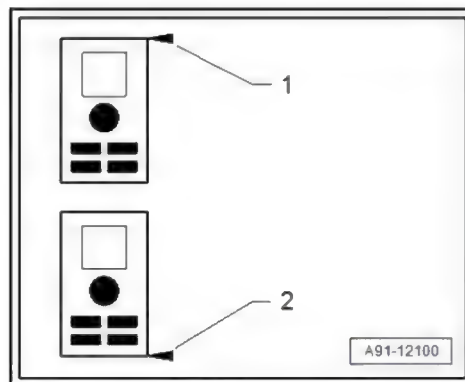


The following display will appear:



The display will show how the spacing laser - VAS 6350/2- should be positioned. Press the appropriate key.

- 1 - Position at front edge
- 2 - Position at rear edge





- Hold spacing laser - VAS 6350/2- -2- on one side of calibration field of calibration unit - VAS 6350- so that rear edge is flush at bracket. Spacing laser - VAS 6350/2- -2- must make firm contact with bracket.

- Briefly press the measurement button.

The laser will switch on.

- Make sure that laser beam from spacing laser - VAS 6350/2- -2- hits lower, larger part of paddle -1-.

If this is not the case, position of paddles must be corrected accordingly using clamping bolts on wheel centre mounting - VAS 6350/1- .

- Hold spacing laser - VAS 6350/2- in locating bracket on calibration field of calibration unit - VAS 6350- with one hand while laser beam is visible on paddle.
- Now press measurement button briefly to measure distance.
- Perform same measuring procedure for rear wheel on other side of calibration field of calibration unit - VAS 6350- .

Measured distance value must be identical on both sides.

If values are not identical:

- Adjust calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- until values on both sides are identical.

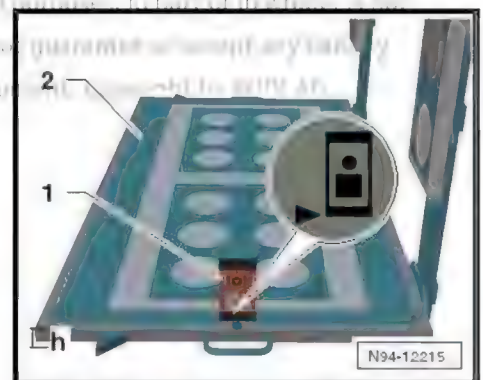
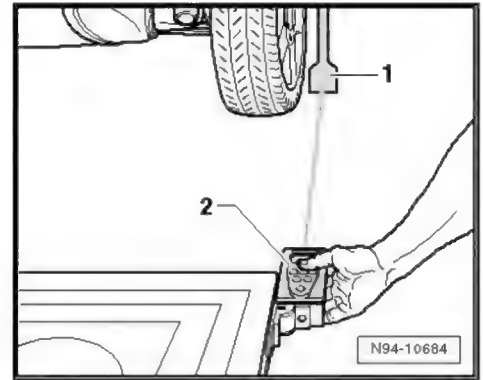
When adjusting calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- , make sure that linear laser - VAS 6350/3- on calibration unit for overhead view camera - VAS 6350/6- still hits centre of Audi rings and spirit level display also remains in the centre. Correct if necessary.

- Make a note of the dimension measured.

Measuring dimension -h-:

- Measure height of calibration unit - VAS 6350- -2- (dimension -h-) from top surface of calibration field of calibration unit - VAS 6350- -2- (not aluminium frame) to floor. Perform the measurement at the hole provided in the calibration field of the calibration unit - VAS 6350- -2-.

Ensure that spacing laser - VAS 6350/2- -1- is correctly adjusted (position at front edge).



The display will show how the spacing laser - VAS 6350/2- should be positioned. Press the appropriate key.

- 1 - Position at front edge
- 2 - Position at rear edge

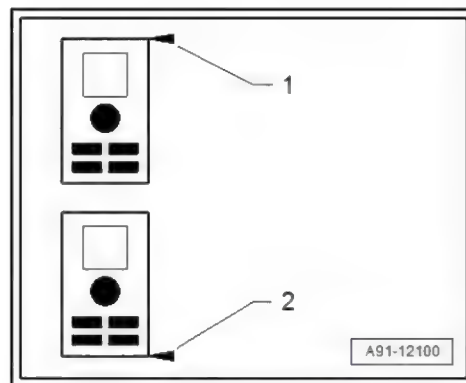
Now enter measured distance value -h- and dimension in millimetres in ⇒ Vehicle diagnostic tester.

Performing calibration

⇒ Vehicle diagnostic tester must be connected.

- Select **Diagnosis** mode and begin diagnosis.
- Select **Test plan** tab.
- Choose **Select own test** and select following options one after the other:
 - ◆ Body
 - ◆ Electrical system
 - ◆ 01 - Self-diagnosis compatible systems
 - ◆ 6C - Control unit for overhead view camera | J928
 - ◆ 6C - Control unit for overhead view camera, functions
 - ◆ 6C - Calibration (Rep. gr. 91)

Further instructions are given by ⇒ Vehicle diagnostic tester during calibration procedure.



WARNING

Make sure no light is reflected on calibration unit for overhead view camera - VAS 6350/6- .

Reflected light impairs the view of the cameras and therefore it may be impossible to perform calibration.

15.6.3 Calibrating left overhead view camera - R244- / right overhead view camera - R245-

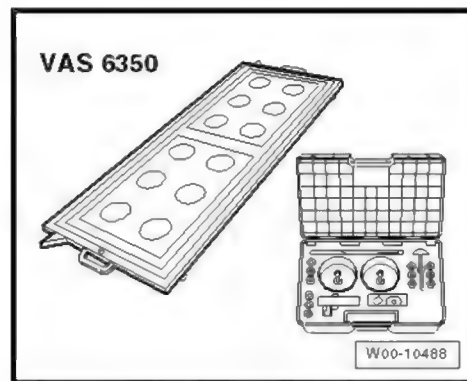
Left overhead view camera - R244- and right overhead view camera - R245- are installed in left and right exterior mirror respectively.

The following describes the calibration process for the left overhead view camera - R244- . The calibration process for the right overhead view camera - R245- is similar.

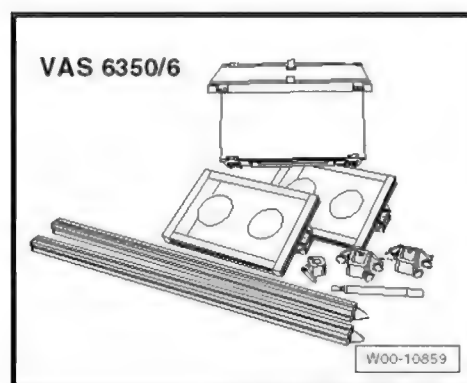
Special tools and workshop equipment required



◆ Calibration unit - VAS 6350-



◆ Calibration unit for overhead view camera - VAS 6350/6-



◆ Supplementary kit for Audi R8 - VAS 6350/5- for rims with large offset (Audi RS 6)

◆ ⇒ Vehicle diagnostic tester

- Ensure requirements are met ⇒ [page 288](#) .
- Set up and align calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- ⇒ [page 288](#) .
- Connect ⇒ Vehicle diagnostic tester.

Setting up calibration unit

Fit wheel centre mounting - VAS 6350/1- :

- Check bolt circle of wheels.
- Prepare wheel centre mountings - VAS 6350/1- as required. Use spacers.
- Use supplementary kit for Audi R8 - VAS 6350/5- for rims with large offset, e.g. for Audi RS 6.
- To do so, secure three wheel bolt adapters to each wheel centre mounting - VAS 6350/1- to match the hole circle.
- Position paddles on both wheel centre mountings - VAS 6350/1- and secure each paddle with clamping bolt.
- Fit wheel centre mountings - VAS 6350/1- onto wheel bolts on front wheels.

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The wheel centre mountings - VAS 6350/1- are kept in position by the O-rings in the adapters.



Note

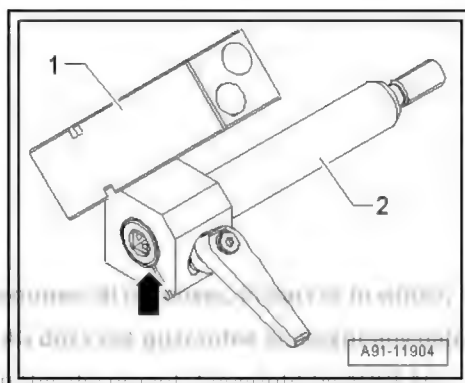
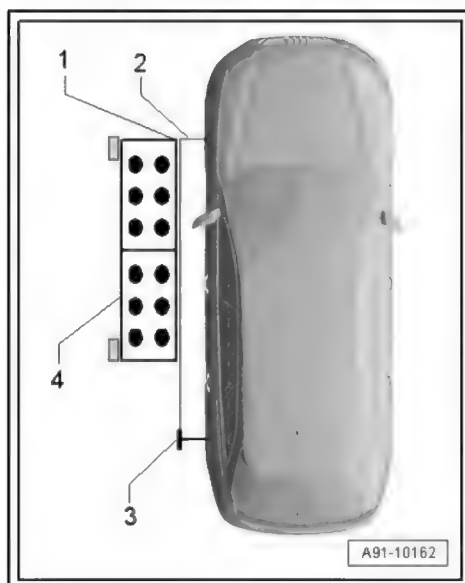
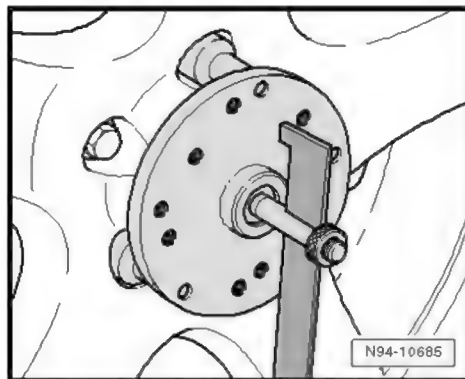
When fitting the wheel centre mountings - VAS 6350/1- onto the wheels, make sure that they are not mounted on any "anti-theft" wheel bolts that might be installed.

- After setting up the calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- -4-, position it next to the vehicle.
- Using clamping bolt, adjust paddle -2- so that it can move freely slightly above calibration field of calibration unit - VAS 6350- -4-.

Fitting linear laser - VAS 6350/3- :

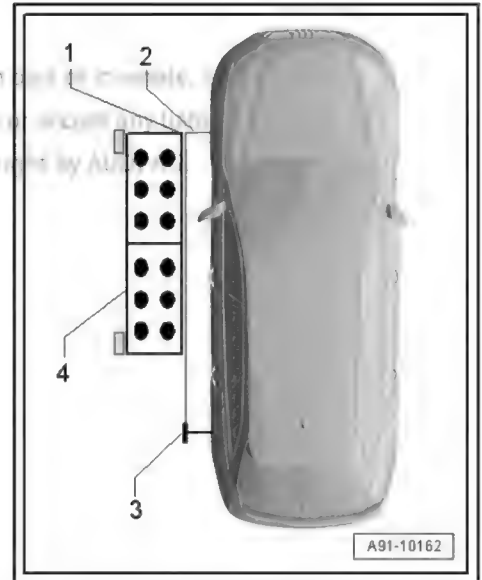
- Use ratchet (3/8-inch) to screw guide pin - VAS 6350/6-5- -2- into rear left wheel as far as stop and fit mounting for linear laser - VAS 6350/6-6- together with linear laser - VAS 6350/3- -1-.
- Slide mounting for linear laser - VAS 6350/6-6- so that outer edge of guide pin - VAS 6350/6-5- is flush with outer edge of laser housing -arrow-. Pull lever tight.

Alignment of calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- :





- Switch on linear laser - VAS 6350/3- -3- and adjust laser beam forwards in direction of wheel centre mounting - VAS 6350/1- -2- so that a line appears on calibration field of calibration unit - VAS 6350- -4-.
- Align calibration field of calibration unit - VAS 6350- -4- so that outer side of black line along length of calibration field of calibration unit - VAS 6350- -4- is located exactly on laser beam.
- Align calibration field of calibration unit - VAS 6350- -4- so that outer side of black line -1- aligns exactly with hanging paddle on wheel centre mounting - VAS 6350/1- -2-.
- Move calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- to a horizontal position.



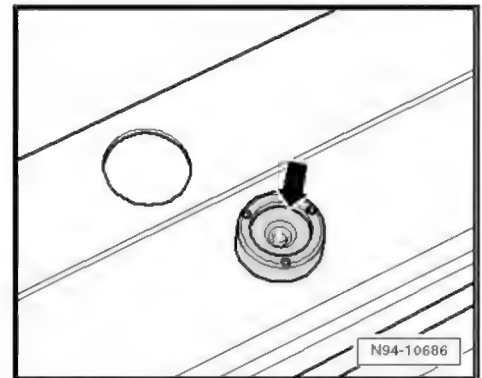
- To do so, turn plastic feet beneath calibration field of calibration unit - VAS 6350- to make air bubble in spirit level move exactly to centre of display -arrow-.



WARNING

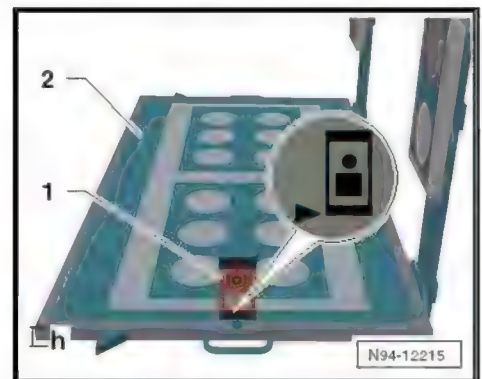
Make sure no light is reflected on calibration unit for overhead view camera - VAS 6350/6- .

Reflected light impairs the view of the cameras and therefore it may be impossible to perform calibration.



- Measure height of calibration unit - VAS 6350- -2- (dimension -h-) from top surface of calibration field of calibration unit - VAS 6350- -2- (not aluminium frame) to floor. Perform the measurement at the hole provided in the calibration field of the calibration unit - VAS 6350- -2-.

Ensure that spacing laser - VAS 6350/2- -1- is correctly adjusted (position at front edge).



The display will show how the spacing laser - VAS 6350/2- should be positioned. Press the appropriate key.

- 1 - Position at front edge
- 2 - Position at rear edge

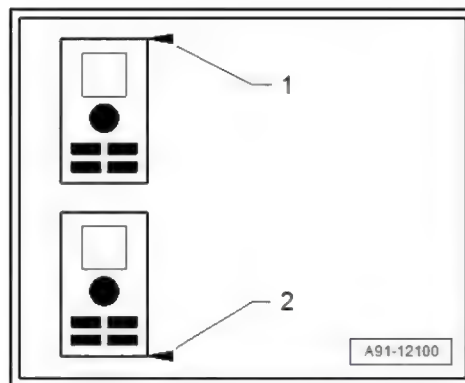
Now enter measured distance value -h- and dimension in millimetres in ⇒ Vehicle diagnostic tester.

Performing calibration

⇒ Vehicle diagnostic tester must be connected.

- Select **Diagnosis** mode and begin diagnosis.
- Select **Test plan** tab.
- Choose **Select own test** and select following options one after the other:
 - ◆ Body
 - ◆ Electrical system
 - ◆ 01 - Self-diagnosis compatible systems
 - ◆ 6C - Control unit for overhead view camera | J928
 - ◆ 6C - Control unit for overhead view camera, functions
 - ◆ 6C - Calibration (Rep. gr. 91)

Further instructions are given by ⇒ Vehicle diagnostic tester during calibration procedure.



WARNING

Make sure no light is reflected on calibration unit for overhead view camera - VAS 6350/6-.

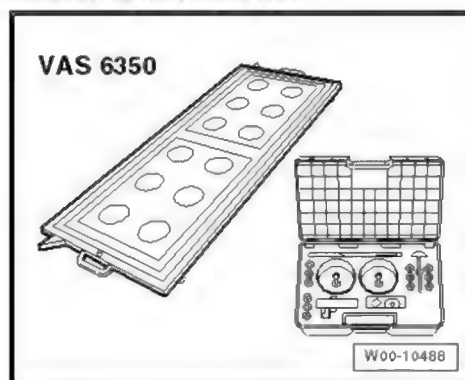
Reflected light impairs the view of the cameras and therefore it may be impossible to perform calibration.

15.6.4 Calibrating rear overhead view camera - R246-

Rear overhead view camera - R246- is installed in handle in rear lid.

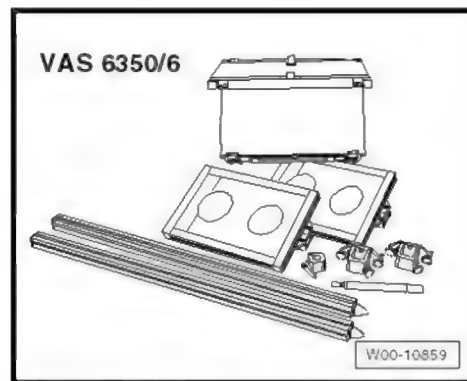
Special tools and workshop equipment required

- ◆ Calibration unit - VAS 6350-





◆ Calibration unit for overhead view camera - VAS 6350/6-



◆ Supplementary kit for Audi R8 - VAS 6350/5- for rims with large offset (Audi RS 6)

◆ ⇒ Vehicle diagnostic tester

- Ensure requirements are met ⇒ [page 288](#) .
- Set up and align calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- ⇒ [page 288](#) .
- Connect ⇒ Vehicle diagnostic tester.

Setting up calibration unit

Fit wheel centre mounting - VAS 6350/1-:

- Check bolt circle of wheels.
- Prepare wheel centre mountings - VAS 6350/1- as required. Use spacers.
- Use supplementary kit for Audi R8 - VAS 6350/5- for rims with large offset, e.g. for Audi RS 6.
- To do so, secure three wheel bolt adapters to each wheel centre mounting - VAS 6350/1- to match the hole circle.
- Position paddles on both wheel centre mountings - VAS 6350/1- and secure each paddle with clamping bolt.
- Fit wheel centre mountings - VAS 6350/1- onto wheel bolts on rear wheels.

The wheel centre mountings - VAS 6350/1- are kept in position by the O-rings in the adapters.

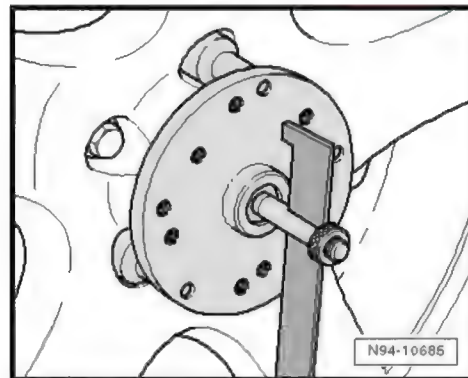


Note

When fitting the wheel centre mountings - VAS 6350/1- onto the wheels, make sure that they are not mounted on any "anti-theft" wheel bolts that might be installed.

- Use clamping bolts to adjust paddles so that they are free to move just slightly above the ground. Make sure the paddles can move freely.

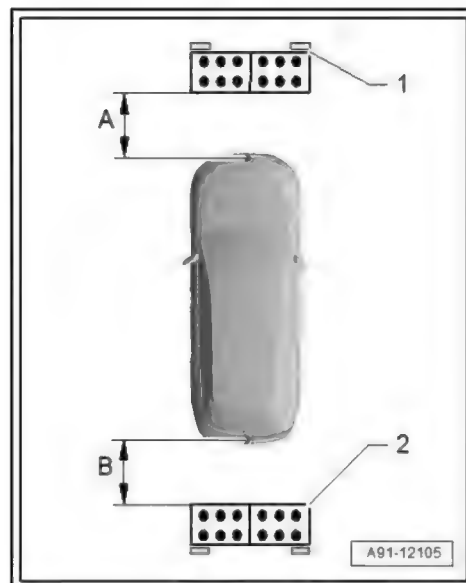
Alignment of calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- :



- After setting up calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- -1-, position it centrally between 400 mm and 600 mm -dimension B- at rear of the vehicle (behind rear bumper cover).

Alignment of calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- :

- Move calibration field of calibration unit - VAS 6350- to a horizontal position.



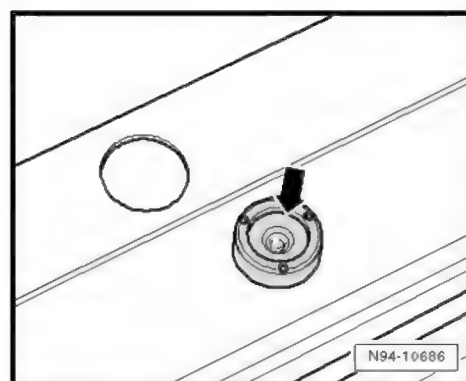
- To do so, turn plastic feet beneath calibration field of calibration unit - VAS 6350- to make air bubble in spirit level move exactly to centre of display -arrow-.



WARNING

Make sure no light is reflected on calibration unit for overhead view camera - VAS 6350/6- .

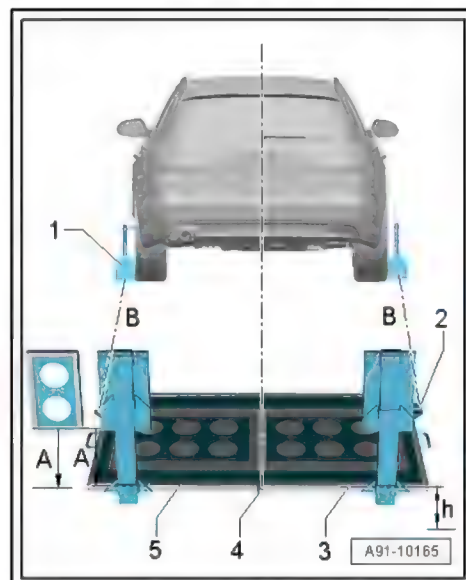
Reflected light impairs the view of the cameras and therefore it may be impossible to perform calibration.



- Secure linear laser - VAS 6350/3- -4- centrally at the location provided on the calibration field of calibration unit - VAS 6350- .
- Switch on linear laser - VAS 6350/3- -4- on calibration field of calibration unit - VAS 6350- and align entire calibration unit - VAS 6350- with calibration unit for overhead view camera - VAS 6350/6- so that beam of linear laser - VAS 6350/3- shines onto centre of Audi rings on rear of vehicle.
- Check whether Audi rings are in centre on rear of vehicle and adjust laser beam accordingly.

Measuring gap:

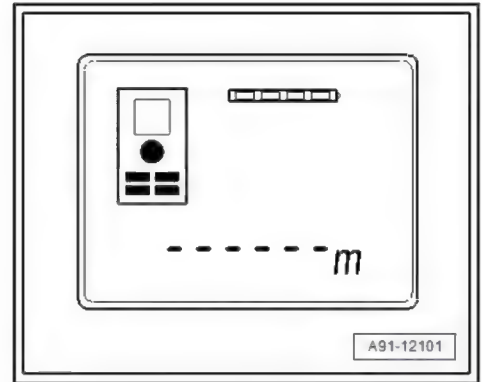
- Switch on spacing laser - VAS 6350/2- .



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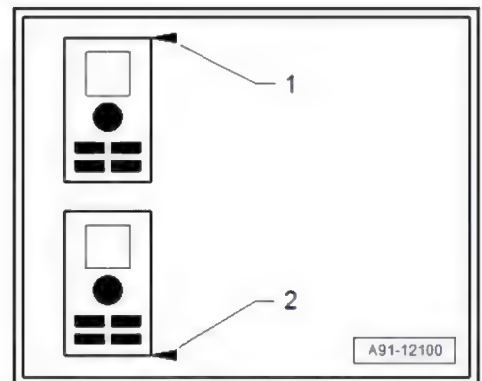


The following display will appear:



The display will show how the spacing laser - VAS 6350/2- should be positioned. Press the appropriate key.

- 1 - Position at front edge
- 2 - Position at rear edge



- Hold spacing laser - VAS 6350/2- -2- on one side of calibration unit - VAS 6350- so that rear edge is flush at bracket. Spacing laser - VAS 6350/2- -2- must make firm contact with bracket.
- Briefly press the measurement button.

The laser will switch on.

- Make sure that laser beam from spacing laser - VAS 6350/2- -2- hits lower, larger part of paddle -1-.

If this is not the case, position of paddles must be corrected accordingly using clamping bolts on wheel centre mounting - VAS 6350/1- .

- Hold spacing laser - VAS 6350/2- in locating bracket on calibration unit - VAS 6350- with one hand while laser beam is visible on paddle.
- Now press measurement button briefly to measure distance.
- Perform same measuring procedure for rear wheel on other side of calibration unit - VAS 6350- .

Measured distance value must be identical on both sides.

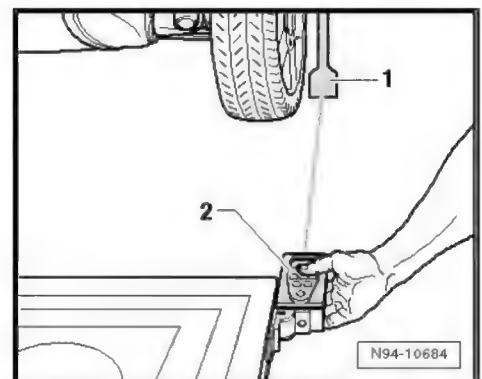
If values are not identical:

- Adjust calibration field of calibration unit - VAS 6350- until values on both sides are identical.

When adjusting calibration field of calibration unit - VAS 6350- , make sure that linear laser - VAS 6350/3- on calibration unit - VAS 6350- still hits centre of Audi rings and spirit level display also remains in the centre. Correct if necessary.

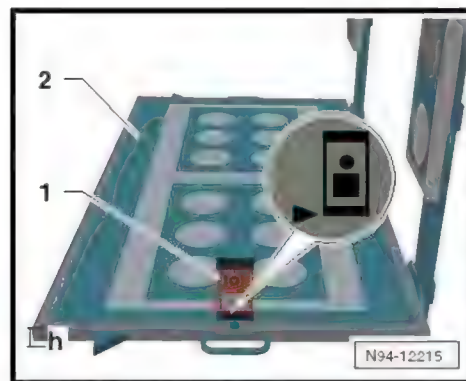
- Make a note of the dimension measured.

Measuring dimension -h-:



- Measure height of calibration unit - VAS 6350- -2- (dimension -h-) from top surface of calibration field of calibration unit - VAS 6350- -2- (not aluminium frame) to floor. Perform the measurement at the hole provided in the calibration field of the calibration unit - VAS 6350- -2-.

Ensure that spacing laser - VAS 6350/2- -1- is correctly adjusted (position at front edge).



The display will show how the spacing laser - VAS 6350/2- should be positioned. Press the appropriate key.

1 - Position at front edge

2 - Position at rear edge

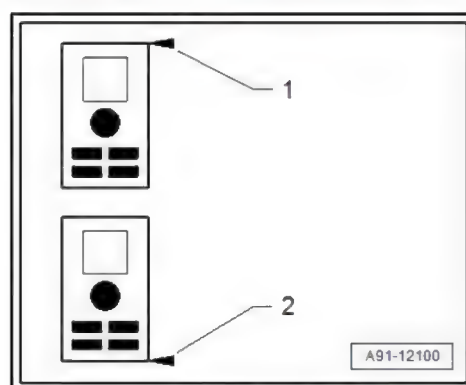
Now enter measured distance value -h- and dimension in millimetres in ⇒ Vehicle diagnostic tester.

Performing calibration

⇒ Vehicle diagnostic tester must be connected.

- Select **Diagnosis** mode and begin diagnosis.
- Select **Test plan** tab.
- Choose **Select own test** and select following options one after the other:
 - ◆ Body
 - ◆ Electrical system
 - ◆ 01 - Self-diagnosis compatible systems
 - ◆ 6C - Control unit for overhead view camera | J928
 - ◆ 6C - Control unit for overhead view camera, functions
 - ◆ 6C - Calibration (Rep. gr. 91)

Further instructions are given by ⇒ Vehicle diagnostic tester during calibration procedure.



WARNING

Make sure no light is reflected on calibration unit for overhead view camera - VAS 6350/6- .

Reflected light impairs the view of the cameras and therefore it may be impossible to perform calibration.



16 Mobile online services

⇒ ["16.1 Layout - mobile online services", page 305](#)

⇒ ["16.2 Overview of fitting locations - mobile online services", page 309](#)

⇒ ["16.3 Removing and installing emergency call module control unit and communication unit J949 ", page 310](#)

⇒ ["16.4 Removing and installing emergency assistance call button E276 ", page 311](#)

⇒ ["16.5 Removing and installing loudspeaker for emergency call module R335 ", page 311](#)

⇒ ["16.6 Removing and installing interface control unit for telematics J1221 ", page 312](#)

⇒ ["16.7 Removing and installing telephone interface RX8 ", page 313](#)

⇒ ["16.8 Removing and installing data transmission aerial R180 ", page 314](#)

16.1 Layout - mobile online services

⇒ ["16.1.1 Layout - mobile online services, Europe and rest-of-world vehicles, IW3", page 305](#)

⇒ ["16.1.2 Layout - mobile online services \(GLONASS\), Russia, IW1", page 306](#)

⇒ ["16.1.3 Layout - mobile online services \(RTM\), China, K8L", page 307](#)

16.1.1 Layout - mobile online services, Europe and rest-of-world vehicles, IW3

The mobile online services (IW3) are based on the OCU (online connectivity unit, emergency call module control unit and communication unit - J949-).

The emergency call module control unit and communication unit - J949- is installed beneath the dash panel on the glove box so it is protected in the event of a crash. The emergency call module control unit and communication unit - J949- contains an emergency call module, a GPS satellite receiver and a compass module. A separate SIM card is fitted for the emergency call function.

1 - Control unit 1 for information electronics - J794- in dash panel

2 - Emergency assistance call button - E276- in front interior light - W1-

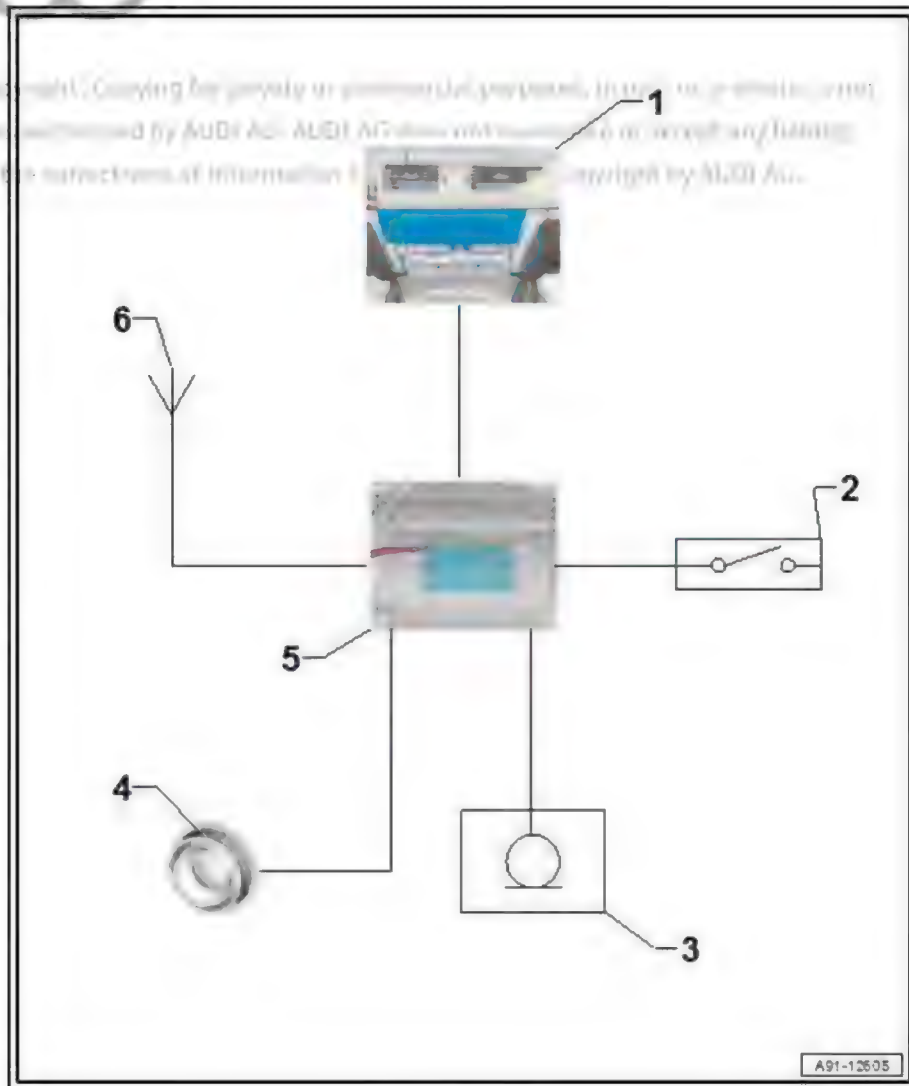
3 - Front left microphone - R140- in front interior light - W1-

4 - Loudspeaker for emergency call module - R335- in dash panel cover (driver's side)

5 - Emergency call module control unit and communication unit - J949- beneath dash panel on glove box

6 - GPS aerial - R50- in roof aerial - R216-

- Emergency call module aerial - R263- under dash panel (front)



Fault finding

The mobile online services system also has self-diagnosis capability.

Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

To be able to diagnose and deal with problems, it is essential to be familiar with the functions of the mobile online services.

For additional information, refer to the ⇒ Owner's Manual and ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

16.1.2 Layout - mobile online services (GLO-NASS), Russia, IW1

The mobile online services (IW1) are based on the OCU (online connectivity unit, emergency call module control unit and communication unit - J949-).

The emergency call module control unit and communication unit - J949- is installed beneath the dash panel on the glove box so it is protected in the event of a crash. The emergency call module control unit and communication unit - J949- contains an emergency call module, a compass module, a GPS satellite receiver



and a communication module with aerial. A separate SIM card is fitted for the emergency call function.

1 - Control unit 1 for information electronics - J794- in dash panel

2 - Emergency assistance call button - E276- in front interior light - W1-

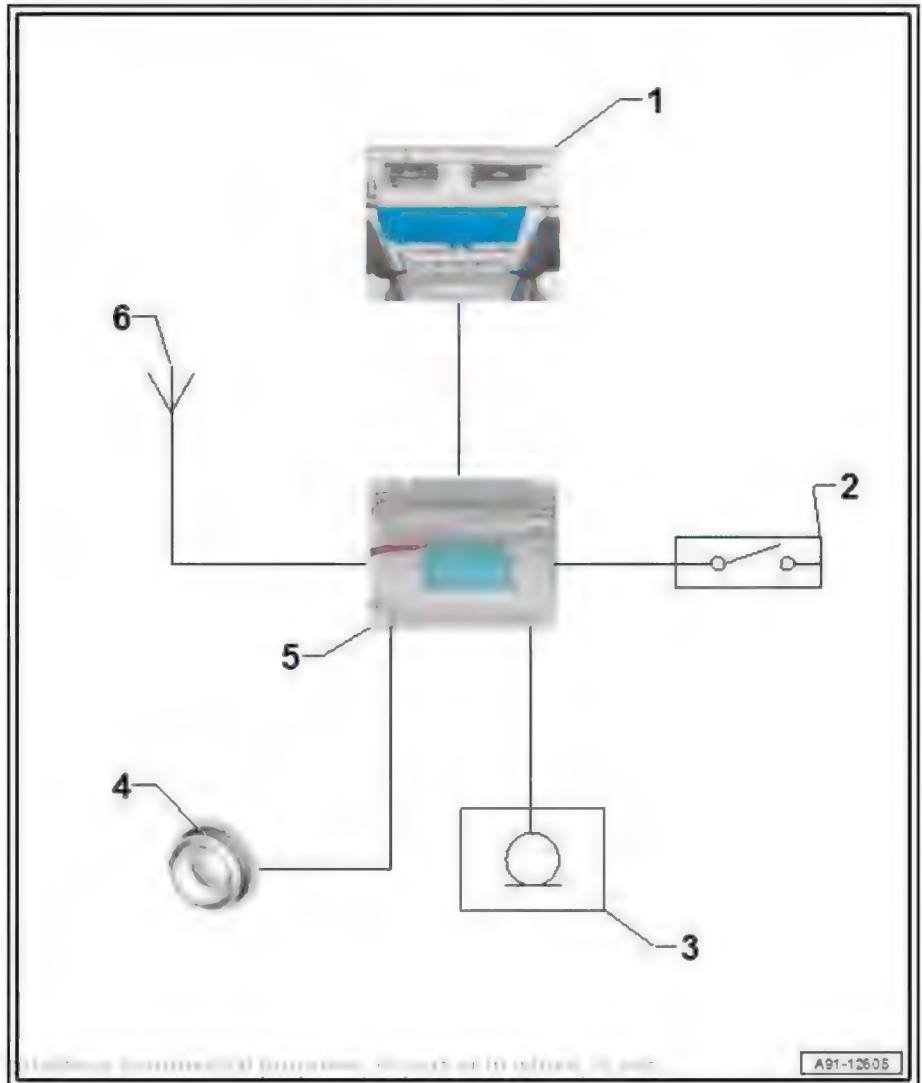
3 - Front left microphone - R140- in front interior light - W1-

4 - Loudspeaker for emergency call module - R335- in dash panel cover (driver's side)

5 - Emergency call module control unit and communication unit - J949- beneath dash panel on glove box

6 - GPS aerial - R50- in roof aerial - R216-

- Emergency call module aerial - R263- under dash panel (front)



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Fault finding

The mobile online services system also has self-diagnosis capability.

Fault finding is performed via "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

To be able to diagnose and deal with problems, it is essential to be familiar with the functions of the mobile online services.

For additional information, refer to the ⇒ Owner's Manual and ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

16.1.3 Layout - mobile online services (RTM), China, K8L

The vehicle location system RTM (K8L) is based on the interface control unit for telematics - J1221- , the telephone interface - RX8- and a combined GPS aerial - R50- / telephone aerial - R65- , the data transmission aerial - R180- .

The interface control unit for telematics - J1221- and the telephone interface - RX8- are fitted in a bracket in the luggage

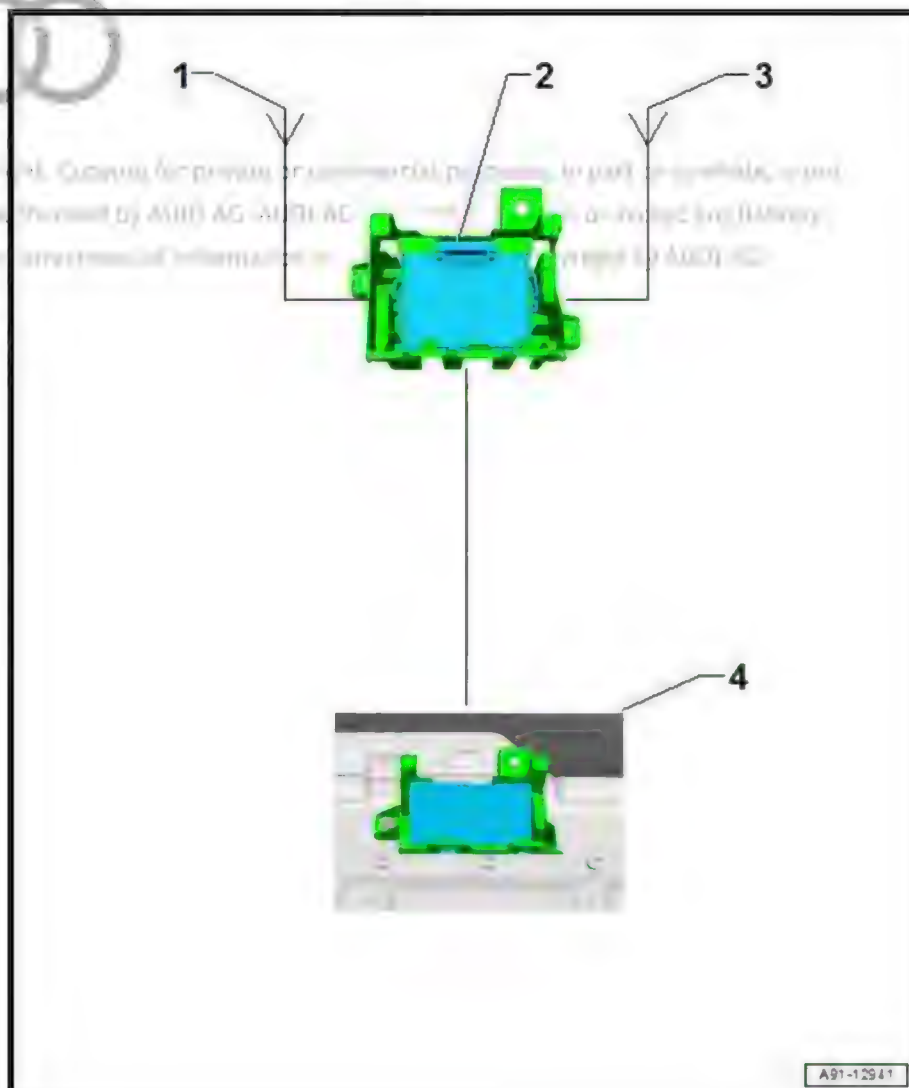
compartment (in front of the high-voltage battery). The data transmission aerial - R180- is installed under the rear shelf.

1 - GPS aerial - R50- , data transmission aerial - R180- in rear shelf

2 - Interface control unit for telematics - J1221- in luggage compartment (front right)

3 - Telephone aerial - R65- , data transmission aerial - R180- in rear shelf

4 - Telephone interface - RX8- in luggage compartment (front right)



16.2 Overview of fitting locations - mobile on-line services

⇒ "16.2.1 Overview of fitting locations - mobile online services, Europe/Russia/rest-of-world vehicles, IW3/IW1", page 309

⇒ "16.2.2 Overview of fitting locations - mobile online services (RTM), China, K8L", page 310

16.2.1 Overview of fitting locations - mobile online services, Europe/Russia/rest-of-world vehicles, IW3/IW1

1 - Emergency call module control unit and communication unit - J949-

- ❑ Pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Removing and installing ⇒ [page 310](#)

2 - Control unit 1 for information electronics - J794-

- ❑ Pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Removing and installing ⇒ [page 18](#)

3 - Bolt

- ❑ 3 Nm

4 - Roof aerial - R216-

- ❑ GPS aerial - R50-
- ❑ Removing and installing ⇒ [page 120](#)

5 - Bolt

- ❑ 2x
- ❑ 2 Nm

6 - Loudspeaker for emergency call module - R335-

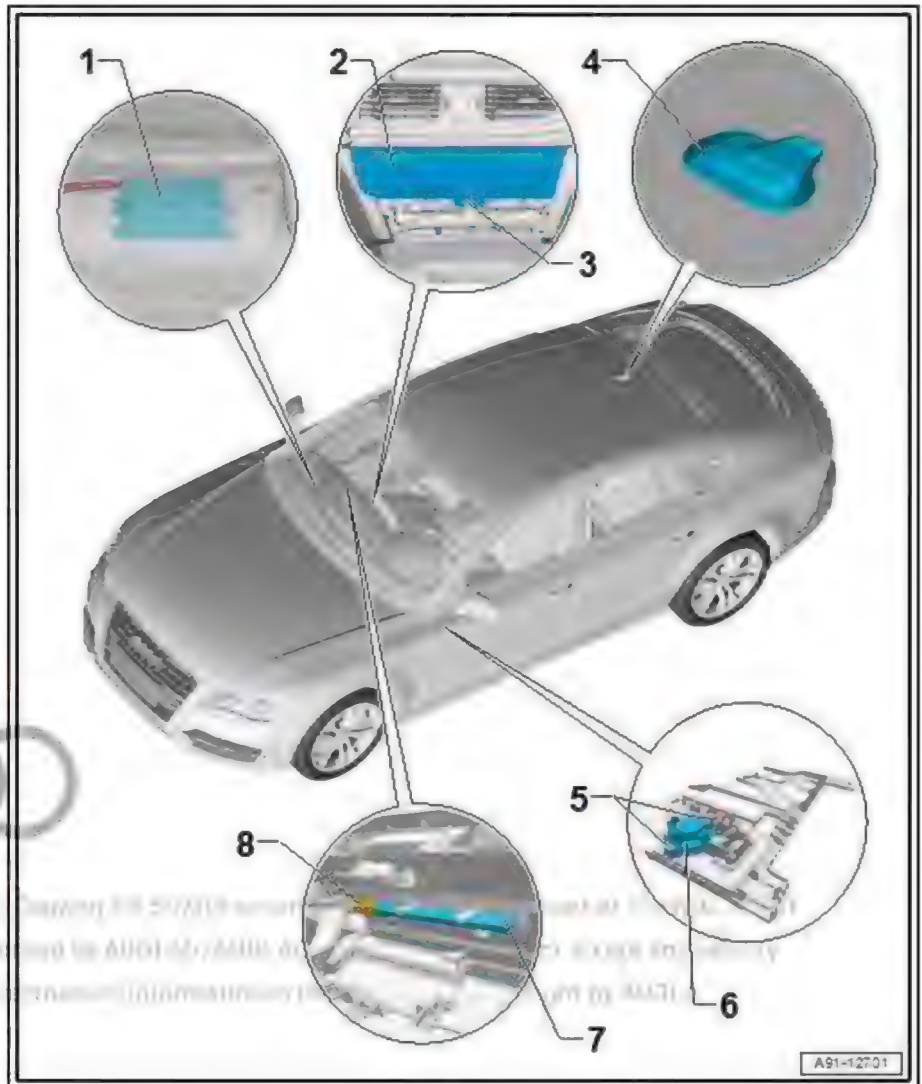
- ❑ Removing and installing ⇒ [page 311](#)

7 - Emergency call module aerial - R263-

- ❑ Removing and installing ⇒ [page 120](#)

8 - Connector

- ❑ See ⇒ Current flow diagrams, Electrical fault finding and Fitting locations



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16.2.2 Overview of fitting locations - mobile online services (RTM), China, K8L

1 - Data transmission aerial - R180-

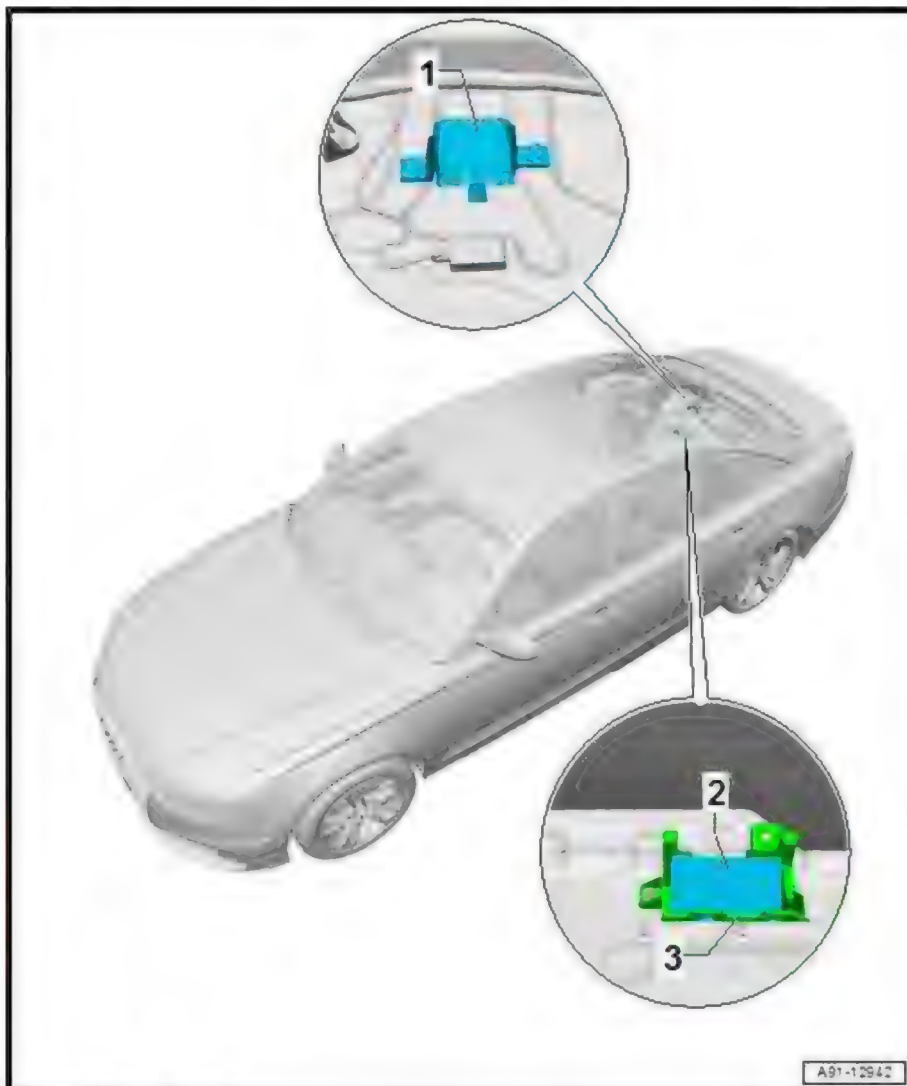
- ❑ GPS aerial - R50- / telephone aerial - R65-
- ❑ Removing and installing
⇒ [page 314](#)

2 - Interface control unit for telematics - J1221-

- ❑ ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Removing and installing
⇒ [page 312](#)

3 - Telephone interface - RX8-

- ❑ ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Removing and installing
⇒ [page 313](#)



16.3 Removing and installing emergency call module control unit and communication unit - J949-

The emergency call module control unit and communication unit - J949- is located beneath the dash panel on the glove box.



Note

If renewing the control unit, select the "Replace control unit" function for the appropriate control unit ⇒ Vehicle diagnostic tester.

ERA-GLONASS (Russia) only: Performing initial start-up ⇒ Maintenance ; Booklet 411 ; Maintenance ; ERA-GLONASS: checking emergency call function.

Removing

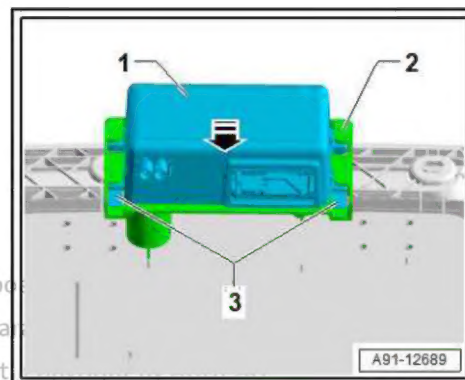
- Switch off ignition and all electrical equipment, and remove ignition key.



- Remove glove box ➔ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Removing and installing glove box .
- Press retaining lugs -3- upwards and release them.
- At the same time, pull emergency call module control unit and communication unit - J949- -1- out of bracket -2- in direction of -arrow- and remove it.

Installing

Install in reverse sequence of removal.



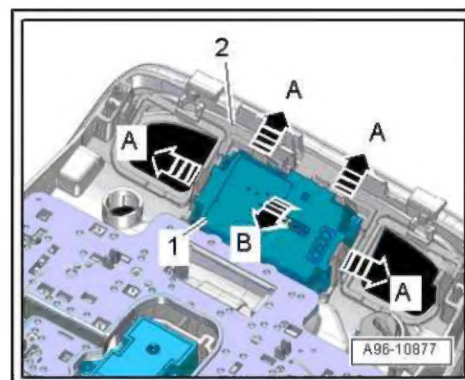
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16.4 Removing and installing emergency assistance call button - E276-

Emergency assistance call button - E276- is fitted in interior light (front) - W1- .

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove front interior light - W1- ➔ Electrical system; Rep. gr. 96 ; Controls; Removing and installing interior light/reading light (front) .
- If fitted, remove anti-theft alarm sensor - G578- ➔ Electrical system; Rep. gr. 96 ; Anti-theft alarm system; Removing and installing anti-theft alarm sensor - G578- .
- Carefully press retaining clips aside -arrows A-.
- Take emergency assistance call button - E276- out of front interior light - W1- -2- in direction of -arrow B-.



Installing

Install in reverse sequence of removal.

16.5 Removing and installing loudspeaker for emergency call module - R335-

Special tools and workshop equipment required

- ♦ Torque screwdriver - V.A.G 1624-



Loudspeaker for emergency call module - R335- is located in dash panel cover (driver side).



Removing

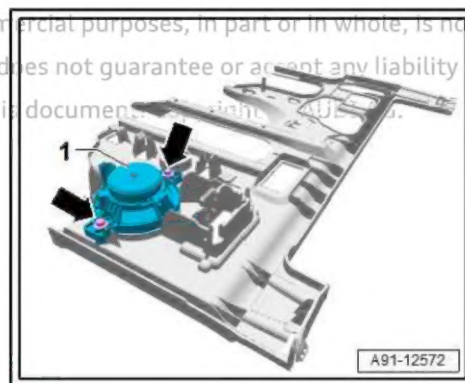
- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove dash panel cover (driver side) ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Exploded view - dash panel cover (driver side) .
- Release and unplug connectors on loudspeaker for emergency call module - R335- .
- Remove bolts -arrows- on loudspeaker for emergency call module - R335- -1-.
- Detach loudspeaker for emergency call module - R335- -1- from dash panel cover.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

- ♦ ⇒ ["16.2 Overview of fitting locations - mobile online services", page 309](#)



16.6 Removing and installing interface control unit for telematics - J1221-

Special tools and workshop equipment required

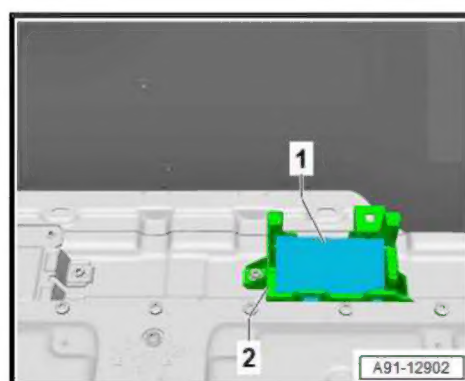
- ♦ Torque screwdriver - V.A.G 1624-



The interface control unit for telematics - J1221- is located in the luggage compartment in front of the hybrid battery unit - AX1- (right-side). It is clipped into a bracket -2- together with the telephone interface - RX8- -1-.

Removing

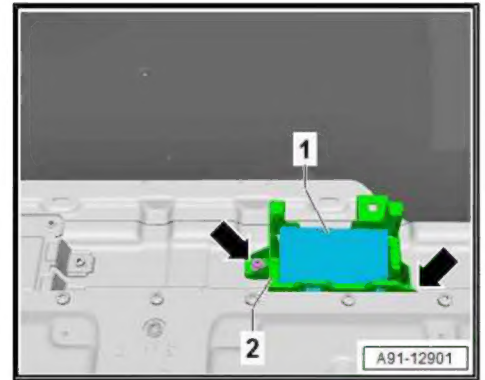
- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove luggage compartment floor covering.





- Remove nuts -arrows- on bracket -2-.
- Pull bracket -2- off studs, and release and unplug electrical connectors.

Unclip telephone interface - RX8- -1- first.



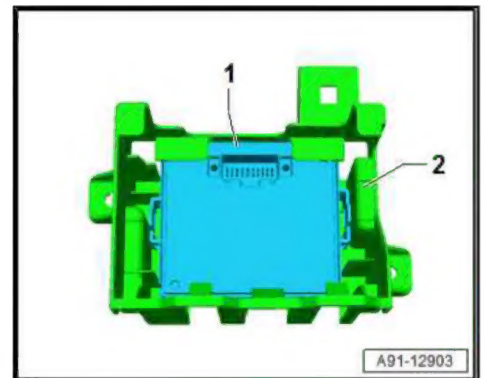
- Press interface control unit for telematics - J1221- -1- out of bracket -2-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

Components	Tightening torque
Bracket to body	3.5 Nm



16.7 Removing and installing telephone interface - RX8-

Special tools and workshop equipment required

- ♦ Torque screwdriver - V.A.G 1624-

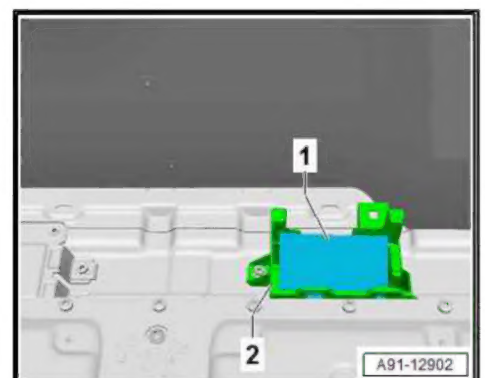
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The telephone interface - RX8- -2- is located in the luggage compartment in front of the hybrid battery unit - AX1- (right-side). It is clipped into a bracket together with the interface control unit for telematics - J1221- -1-.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove luggage compartment floor covering.





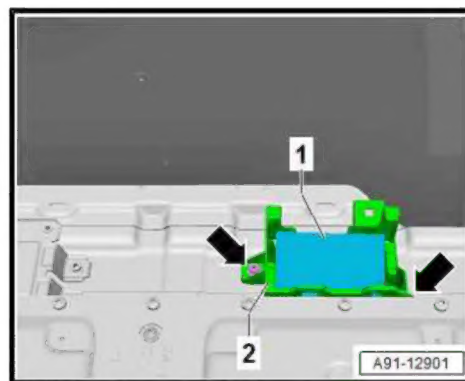
- Remove nuts -arrows- on bracket -2-.
- Pull bracket -2- off studs, and release and unplug electrical connectors.
- Press telephone interface - RX8- -1- out of bracket -2-.

Installing

- Installation is carried out in reverse sequence; note the following:

Tightening torques

Components	Tightening torque
Bracket to body	3.5 Nm



16.8 Removing and installing data transmission aerial - R180-

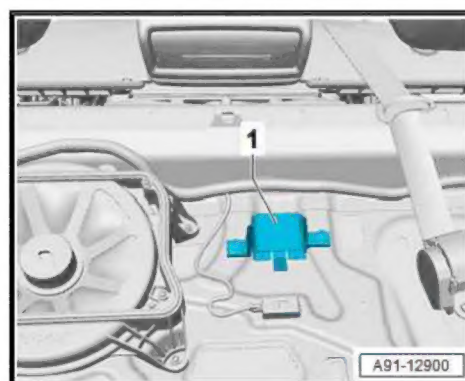
The data transmission aerial - R180- is located in the rear shelf.

Removing

- Switch off ignition and all electrical equipment, and remove ignition key.
- Remove rear shelf ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim; Removing and installing rear shelf .
- Release and unplug connector at data transmission aerial - R180- -1-.
- Press down catch and pull data transmission aerial - R180- out of bracket.

Installing

Install in reverse sequence of removal.



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